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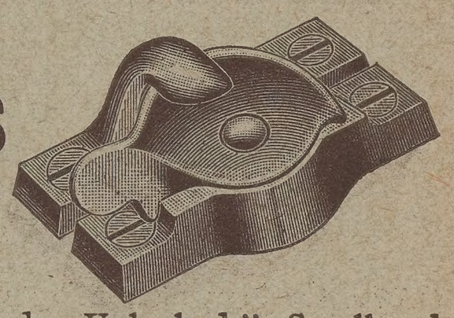

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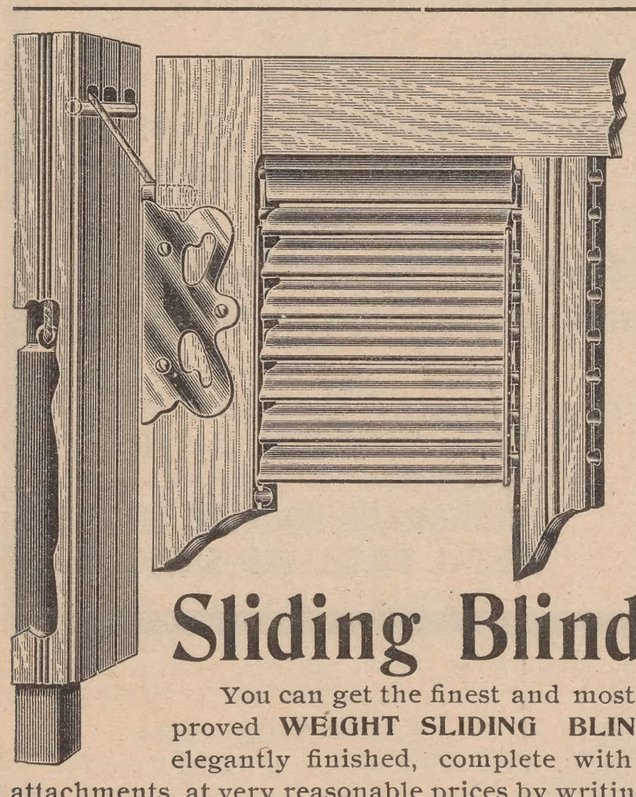

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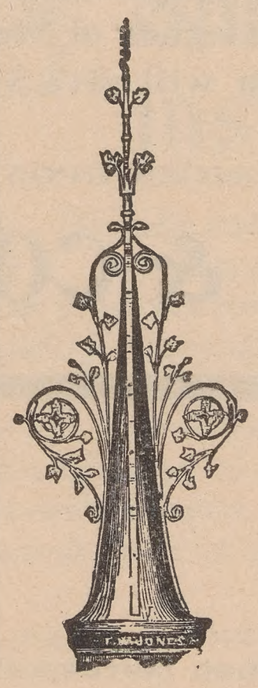

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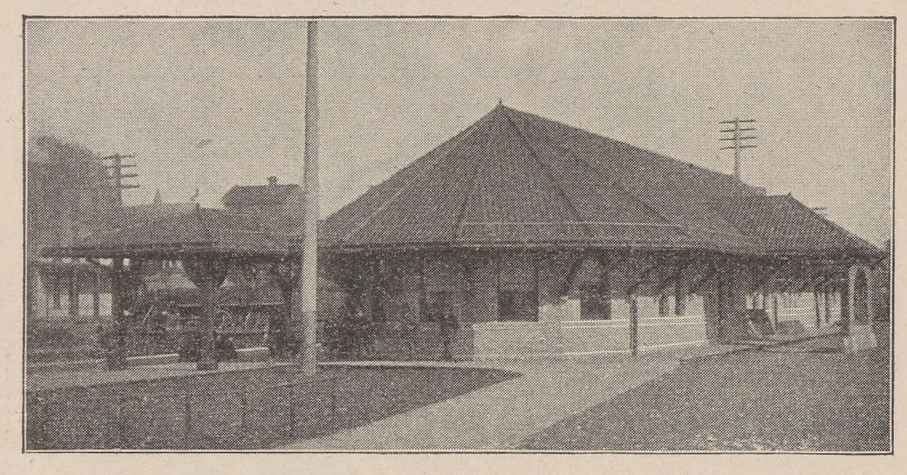

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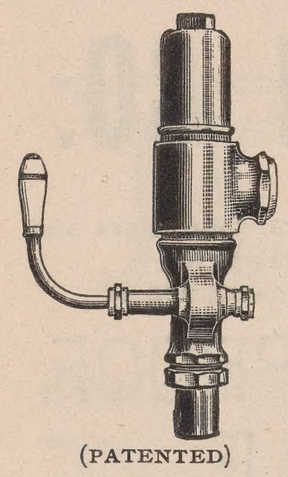

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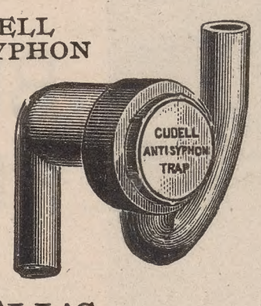

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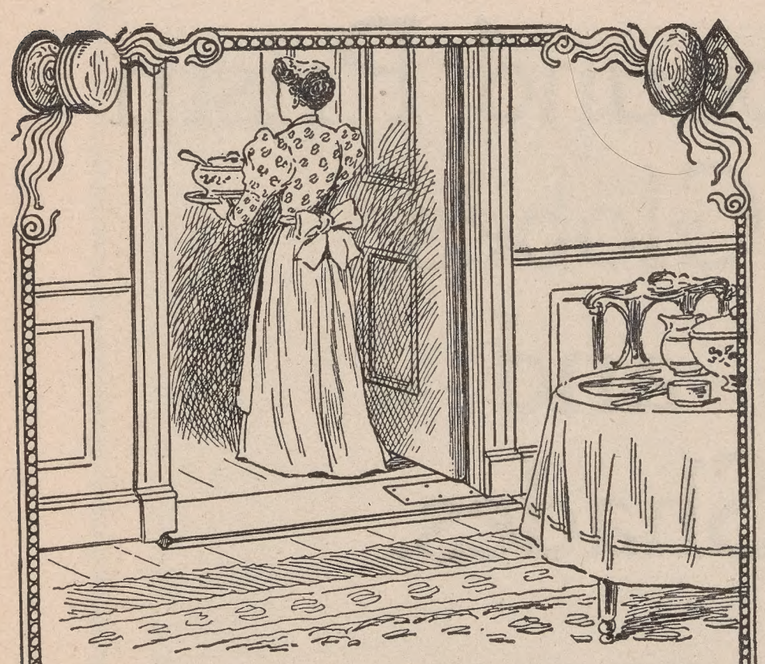

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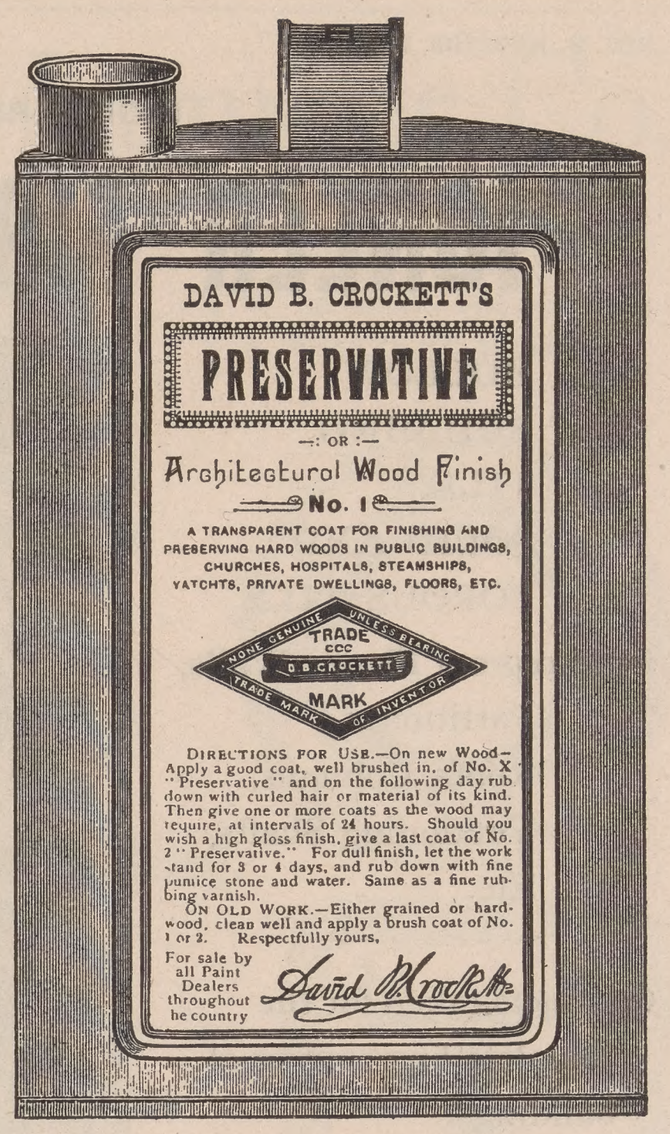
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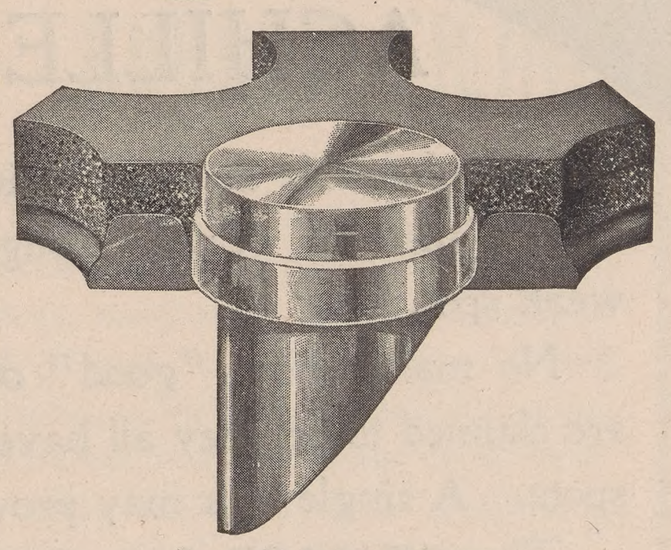

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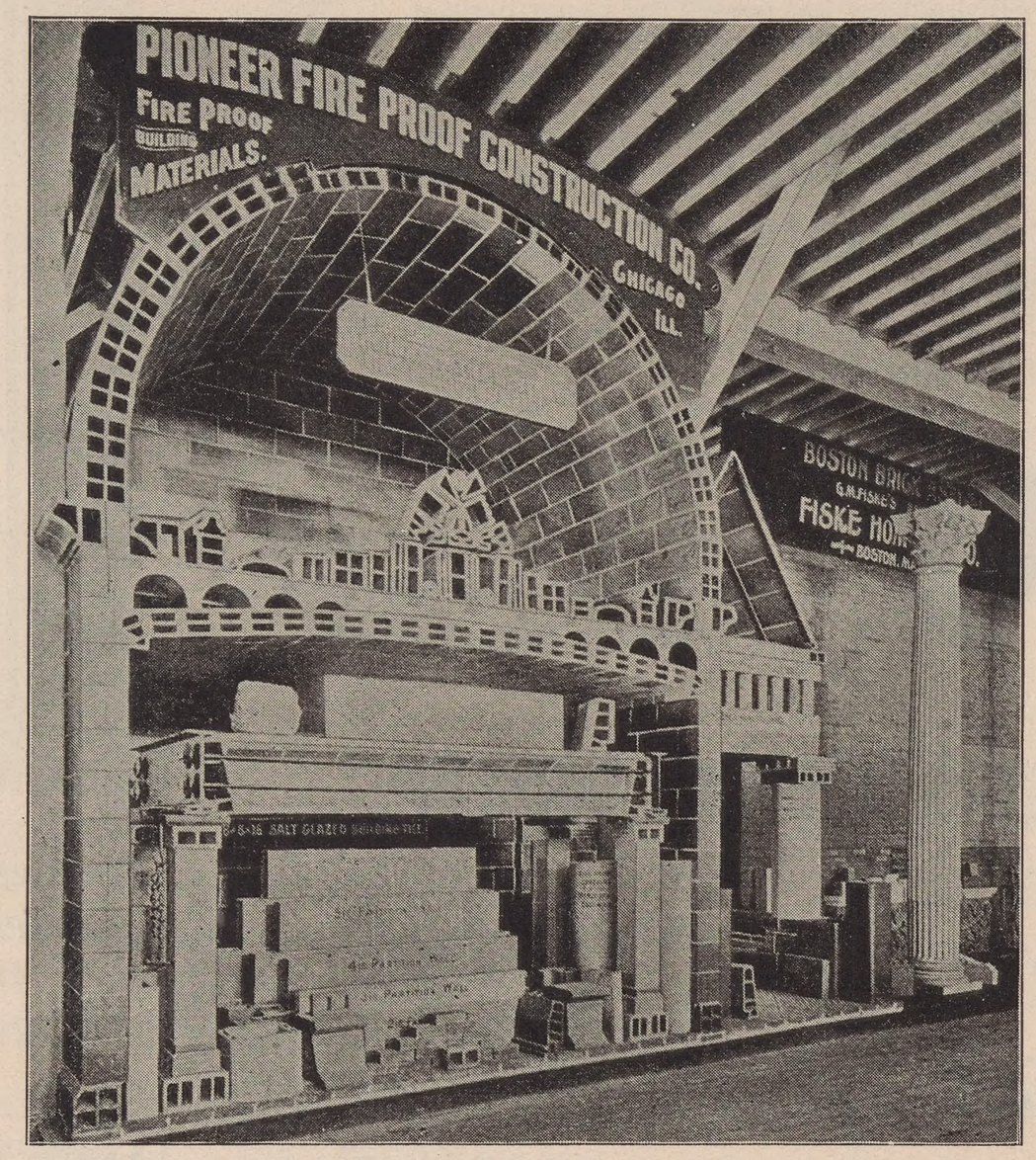

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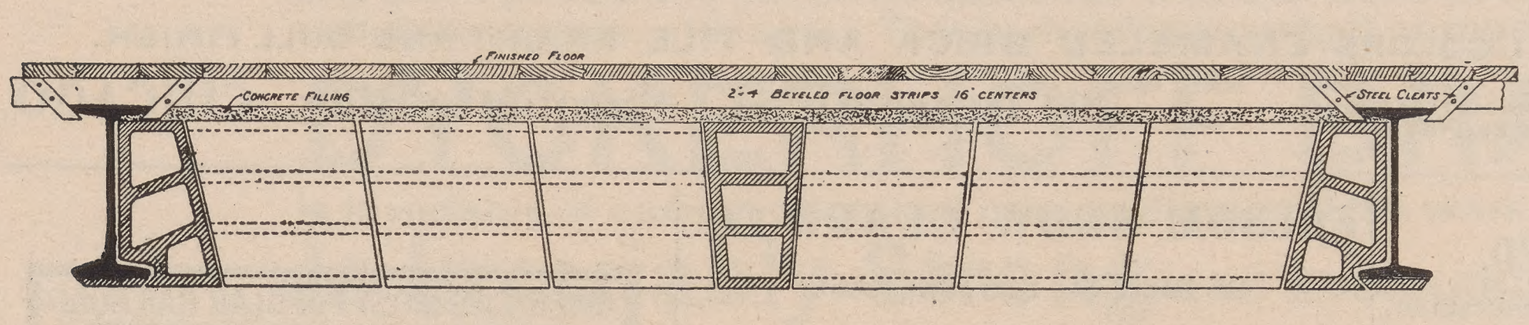

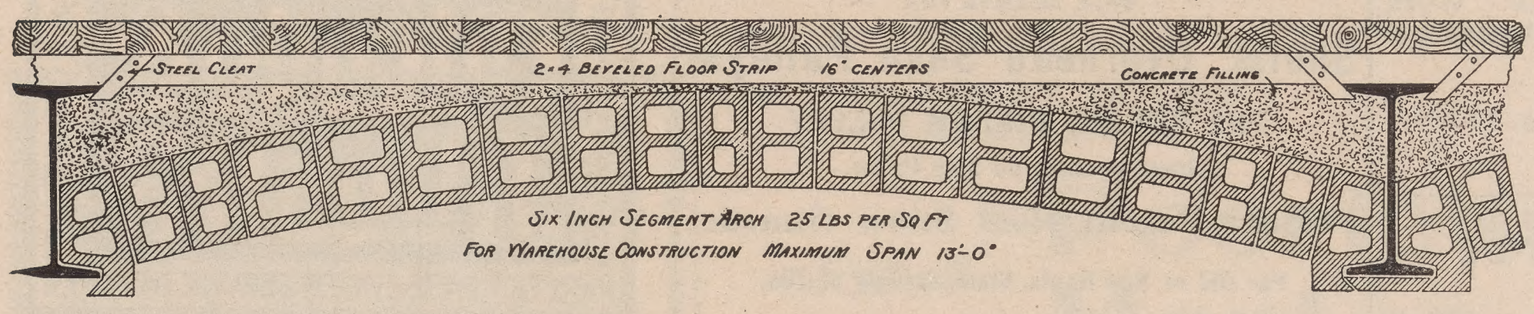
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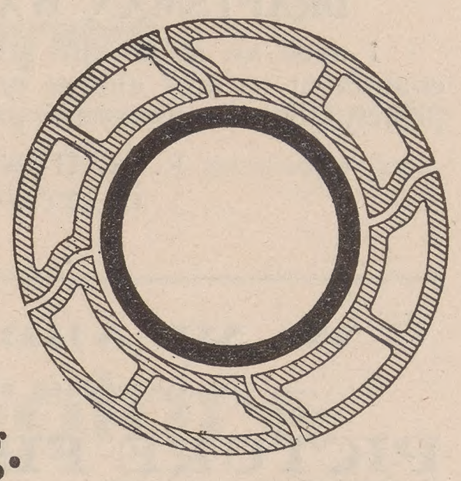

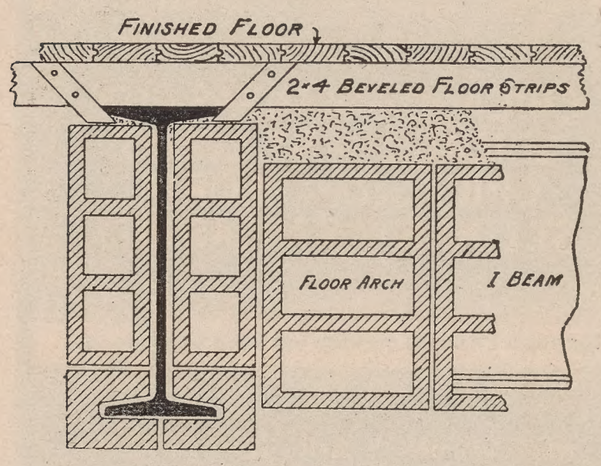

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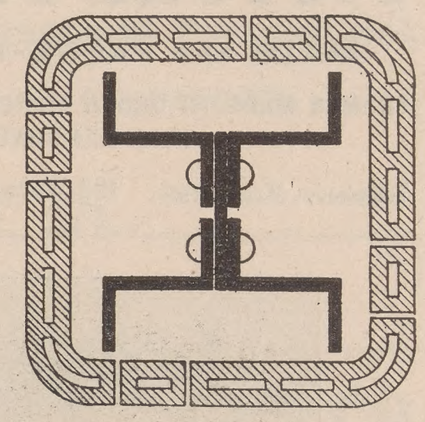

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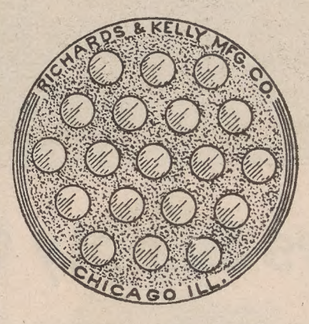

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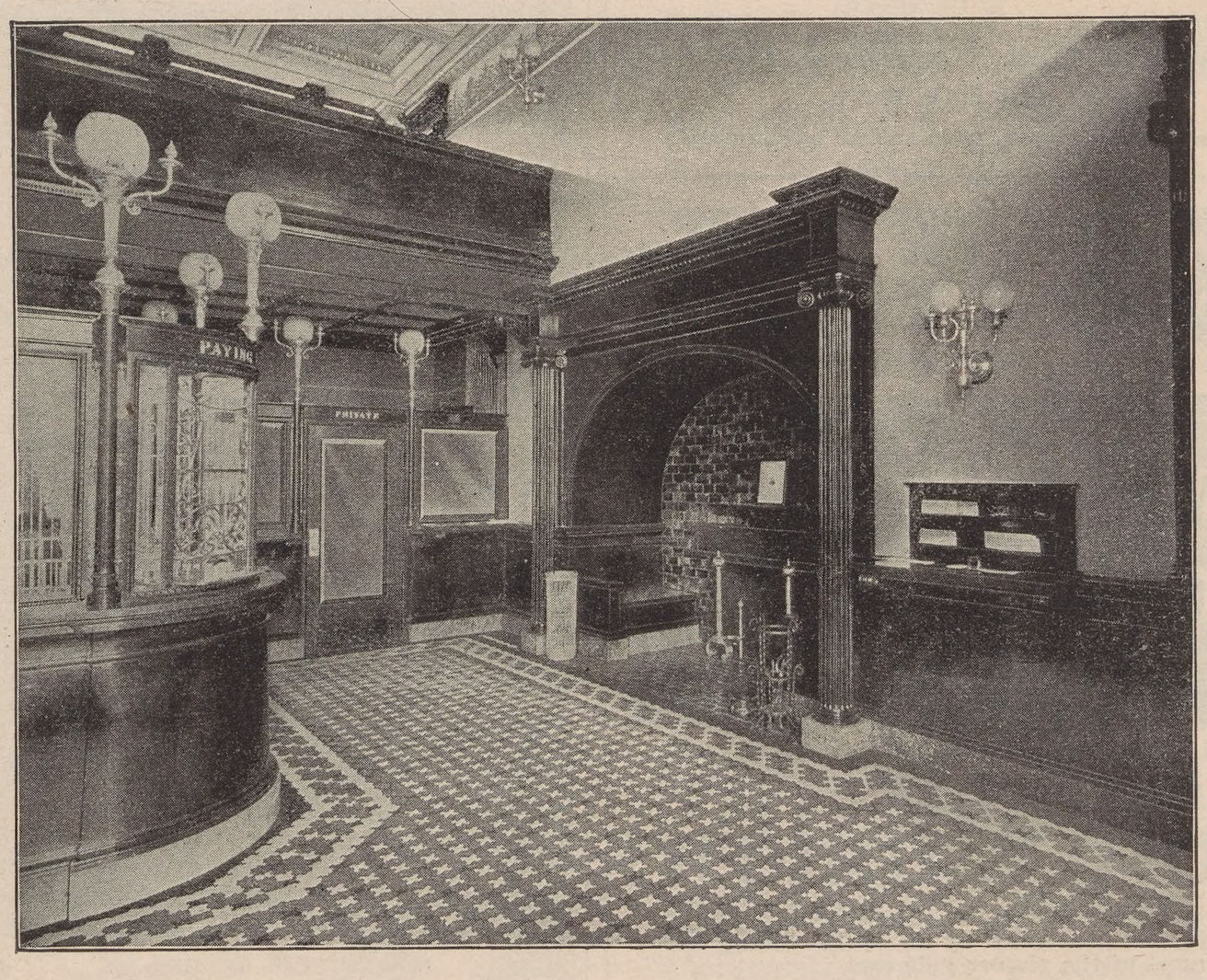

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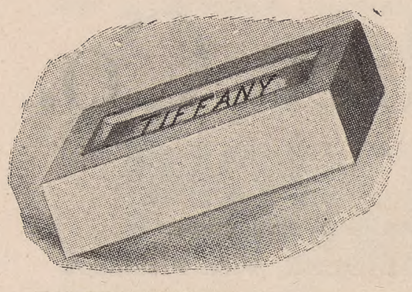

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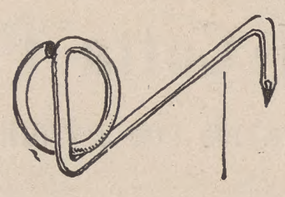

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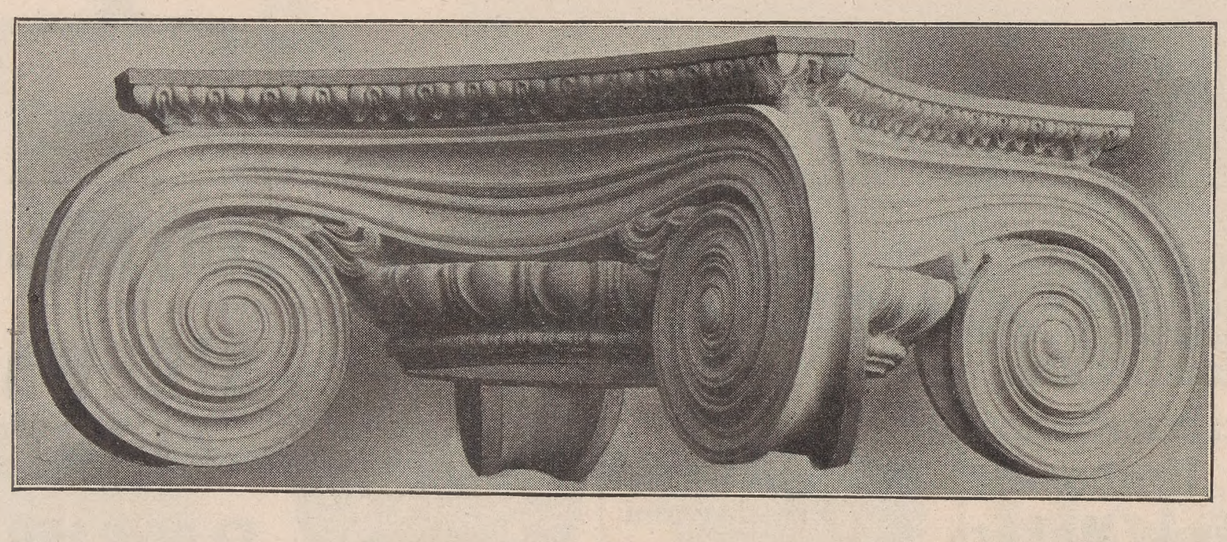

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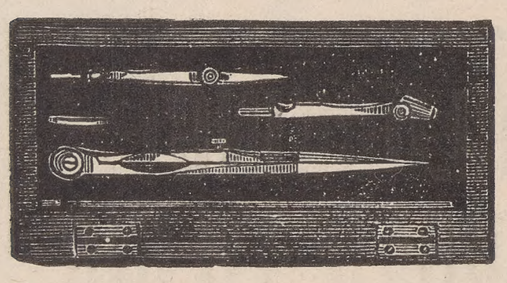

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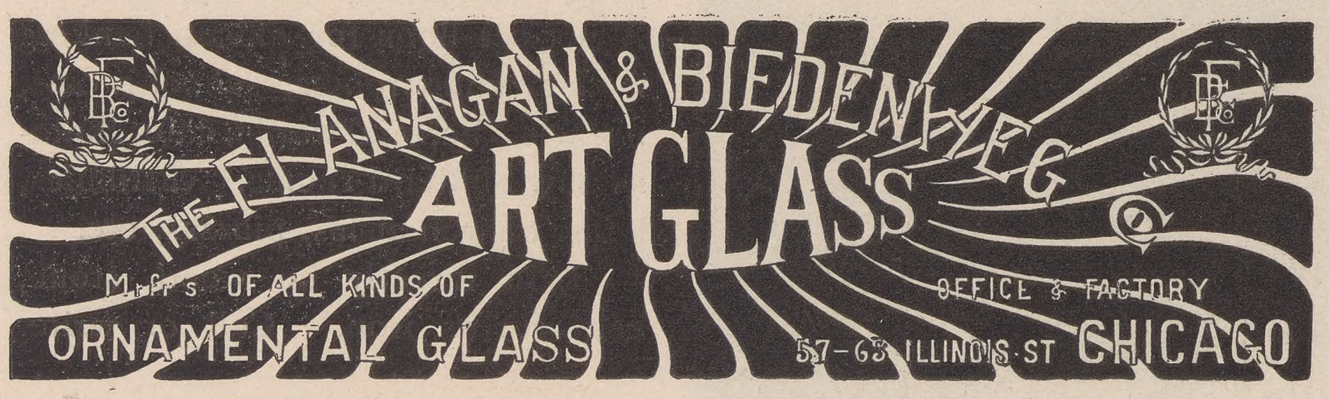

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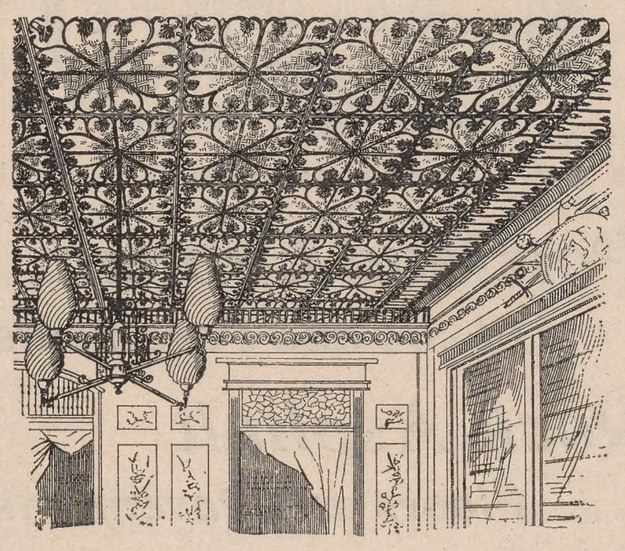

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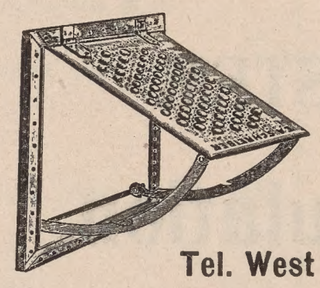

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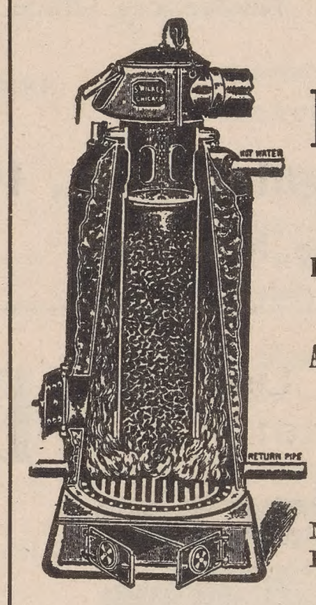

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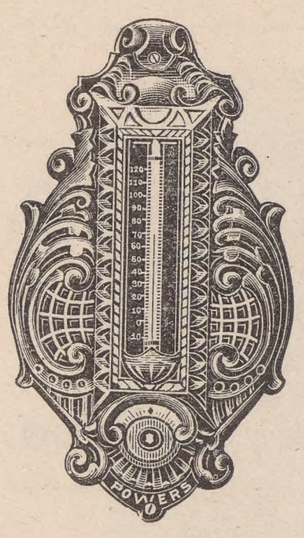

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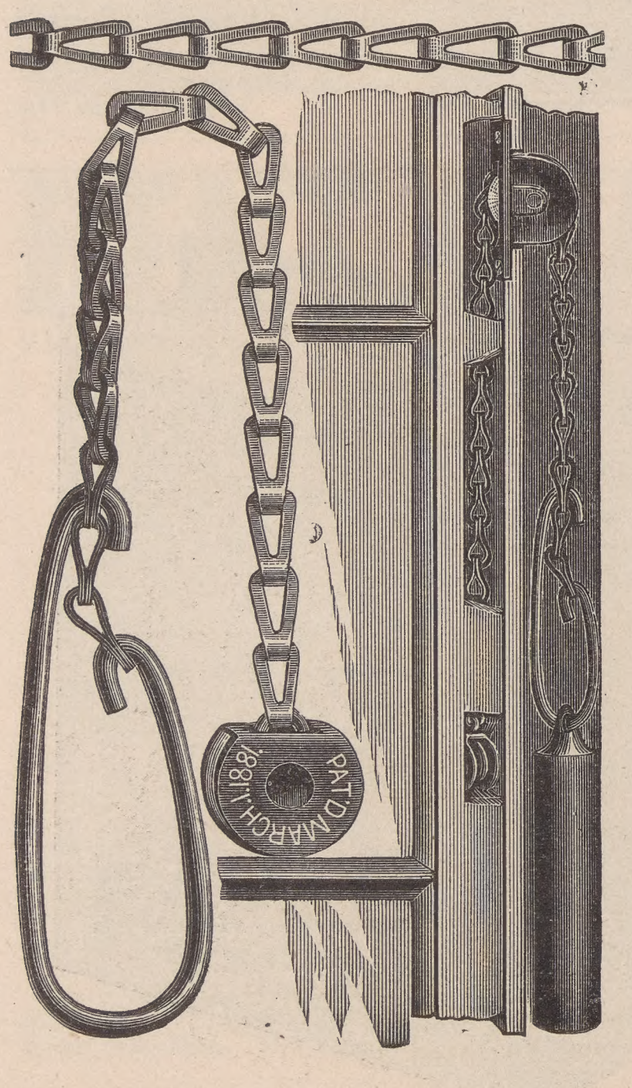

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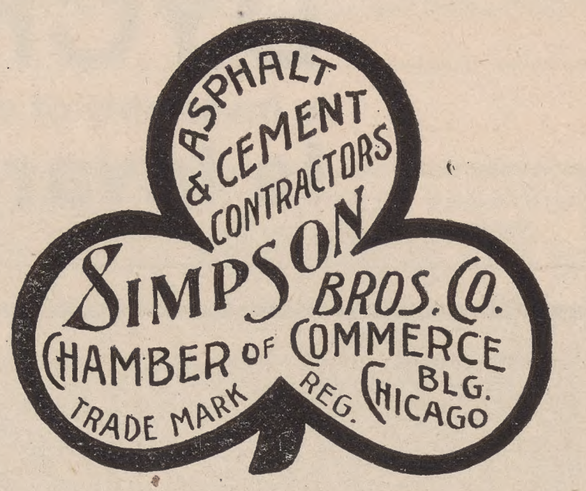

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Protest Against White House Defacement.

In the active growth of this country during the one hundred years which have been occupied in laying the foundations for a great nation, but few of the survey stakes that marked its beginning remain, the shaft at Bunker Hill, the battle monument at Baltimore, Independence Hall and the White House at Washington being among the few relics of a time when the work of each day made history and indicated the form of the structure. Of these perhaps the White House at Washington, second only to the home at Mount Vernon, appeals most to those who revere our nation's history and its expression in architecture and art as well. The protest of the Fine Arts Union against any remodeling of the executive mansion and its alternative proposition that nothing be done without the advice of an expert commission of architects and sculptors of national reputation is most timely and its consideration by Congress most imperative. It is a dangerous thing for any nation to deface or destroy the monuments that mark an honorable past, and since the enlargement of this building seems necessary it is little to ask that the legislators who have it in their power to destroy or preserve it should seek advice from those skilled in art, and with no interests other than its preservation to influence their verdict.

Approach of a Crisis in Building Affairs.

As noted in these columns some months ago, a crisis is fast approaching in the relations between the members of organized labor and the building public in Chicago. The senseless, arbitrary conduct of those who make the rules for workmen to blindly follow—with starvation or violent death as an alternative—has reached a point where it has become impossible for capital to make a safe venture in building. The action of the contractors in declaring certain things which they will do is right, and the rules decided upon are such as any fair-minded man in or out of the building business must endorse. It remains for them to try and pursue their work on these lines. If the interference of the lawless element is too great for business to be continued with profit, there is nothing left but to go out of business. They will probably not have to wait long, because the Government building must soon be carried to completion, and the Government is one contractor who does not have to depend on a partisan police force to protect its employes. The effect of a patrol of "regulars" protecting the citizen who wishes to do an honest day's work for an honest day's pay will do more than all the resolutions and rules of contractors, or even the heroic action of the individual workman who is brave enough to kill the outlaw who assaults him, to establish in the lowest mind the fact that this is a country where the rights of the humblest or the greatest individual is equal to that of any organization or clique. We would have wished that the matter had been left for the Government to act first and the bayonets of an impartial soldiery establish again the ignored principle of right, which must be established before either workman or capitalist can hope to pursue his calling unmolested.

PRACTICAL NOTES ON BUILDING CONSTRUCTION AND MATERIALS.

BY FREDERICK BAUMANN, ARCHITECT.

THE general subject of mortar having received a brief treatment in my article on "Frost," published in the October, 1898, number of this journal, I merely add here some important considerations as to *sand*, which in all common mortar is an ingredient of essential character.

MORTAR.

Mortar-sand should be of a decided grain. The more uneven the confines of each of its grains, the more surface is offered to the lime for attaching. Hence it would follow that original land sand, as débris of disintegrated rock, is the preferable kind. Sand with grains worn smooth by the action of water-currents can not be as efficient. It has another disadvantage. The surfaces of its grains have been deprived of that minute quantity of soluble silica which adheres to those of the rock-faced grains of land sand. The quantity of this soluble silica may be ever so minute, it can never fail to enhance, in due proportion, the setting quality of the mortar. The effect of this property can readily be observed even with sand otherwise far too fine in its grains for any kind of good mortar. It may, in spite of its fineness, yield an efficient mortar, if masons will not fail to intermix it with the proper quantum of lime. They are apt to neglect this, because "slimy" sand will allow poor mortar to readily slip off the trowel, while gritty mortar will not, if not mixed in the proportions demanded by the setting process.

The thicker the mortar joint the more essential the demand for a coarse-grained sand. That mortar should be thoroughly mixed to a homogeneous mass is a self-understood demand. And yet a great many cases of transgression may be observed in casting an eye on the mortar pile for a building under construction.

While sand is an essential constituent of lime mortar, it is a mere thinning-out substance in cement-mortar. Cement should be understood as being a substance which, *by dint of chemical action* on the part of its constituents, when rightly intermixed with water, gradually, within the course of days, if not hours, consolidates to a more or less firm substance, which reaches its final solidity after some months. It forms no sort of combination with the sand intermixed. The setting process leaves no time for "unlocking" the minutest part of the silica. Perfect cement—the best Portland—contains all the ingredients required for interaction and combination with water. The sand intermixed is a mere *diluting substance*, weakening the inherent properties of the cement in proportion to its quantity. Each grain of sand, with its rough surfaces to which the cement adheres, is therein enveloped. The poorest, though still efficient cement mortar, must contain cement enough to fill *all* voids contained in the sand. The coarser the sand, the greater the proportion of its voids, and the richer the mortar.

The grains of sand intermixed in cement should, therefore, by all means be large; the larger the better. The cement solidified between its grains is then of some sort of positive thickness. Sand without a fair grain can never be fit for efficient cement mortar. Even the best Portland may be destroyed by mixing it with sand of a very minute grain.

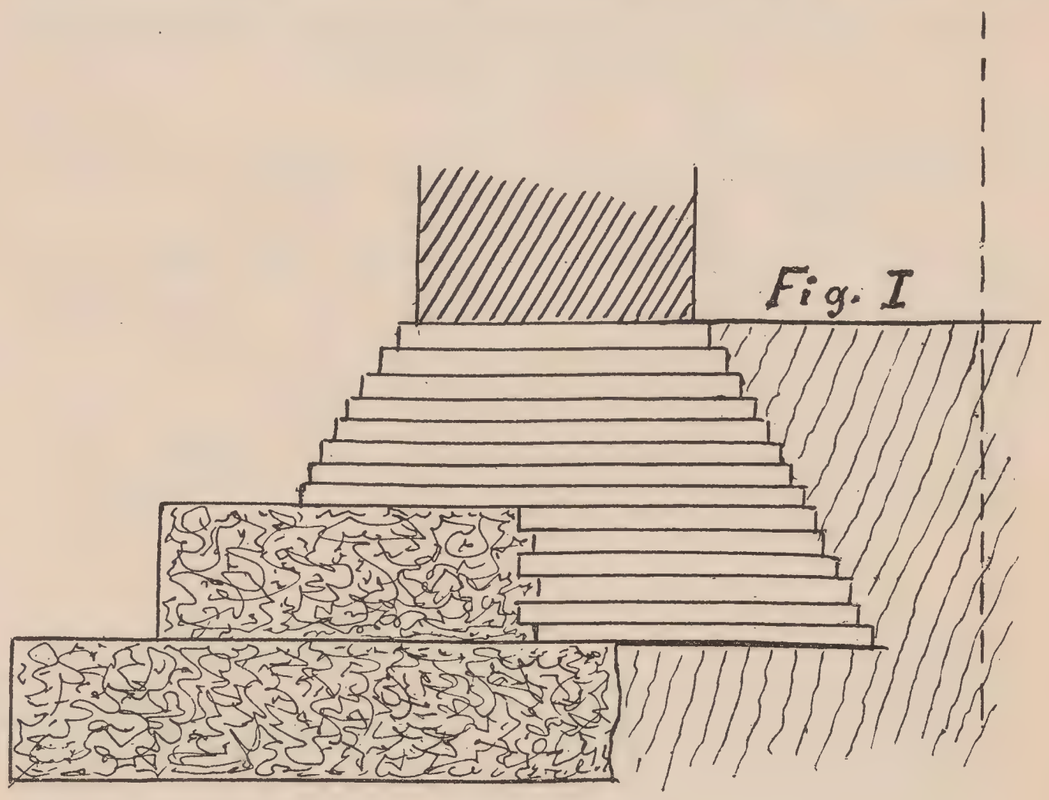
The adhesion of cement to the grains of sand is positively of a mere physical (mechanical) nature, while the lime in common mortar acts, *and continues to act*, by dint of its caustic property, as a chemical base, upon the surfaces of the grains of sand, so as to actually combine with them as well as with the surfaces of the building material, during the course of long-continued time.

Frost, as stated in my article first above referred to, destroys all cements during their setting process, with the exception, perhaps, of some brands of Portland. Lime, on the other hand, is materially improved. With the precautions recommended, brickwork may advantageously be done in frosty season, though stonework should at such time never be carried on, it being impracticable to apply the required precautions.

Cement may be destroyed as to its quality by long or careless exposure. It is of great importance to ascertain its quality prior to using it.

CONCRETE.

This article, nowadays (1)* is understood to be an intimate mixture of cement mortar with hard material, brick or stone, preferably stone broken to an average size of one to three cubic inches. The cement used should unexceptionally be Portland. I prefer to first obtain a mortar by mixing one part of cement with three to four of coarse sand, and then to intermix this with as many (three to four) parts of the crushed stone as the case of filling the voids may allow, with assured certainty as to this. Such concrete thoroughly mixed, spread in layers and pounded solid, may acquire a solidity equal to that of sound stone. The subwork to the stone structure sustaining the "Liberty" on Bedloe's Island, to a height of some forty or fifty feet, consists wholly of concrete. A far more important piece of concrete work was successfully carried out by General Casey and Captain Green in extending the foundation under the Washington Monument, for the purpose of completing the stump which had been standing there for the past thirty years. It had been carried up about 160 feet high on a foundation of entirely inadequate proportions. Conditions of the case were such as to only allow the application of an efficient concrete. This could be and was successively applied in narrow sections, such as shown in Fig. 1. This was,



for aught I know, the most daring though successful piece of work of the kind ever attempted in the world. The weight upon base is stated to be eleven tons per square foot on the center, diminishing to five tons at the outlines. The truth of this is not subject to doubt. The soil is stated to be hard clay intermixed with gravel. It bears the immense obelisk which is known to be the tallest of massive structures in the world.

This extraordinary exploit in the line of concrete work should, however, not be taken as a fair example for architects to blindly follow. The Government officers had every chance for obtaining not alone the very best material; they could and did experiment in order to learn the best proportions, kind and manner of mixture, and the resistant quality of the same when fully hardened. Success was the result of careful studies and of exact preparations for the execution of this work. It would seem next to impossible for an architect to get a concrete made of such extraordinary tenacity. The example, however, gives evidence that many kinds of foundation piers and all such walls may well be made of concrete, and with good effect, where dependence can be had on the quality of the cement and integrity of the work. The quality of every kind of work is dependent on this integrity and on the quality of the material. The wonted preference generally given to solid material work may justly be pronounced as the result of mere habit, to which we all are subject. Faith in concrete has ever been gaining and continues to gain. A concrete foundation-base upon the ground has for long been preferred, since it assures *solid* contact with the ground upon which it rests. (2) The quality of all concrete, I repeat it, depends upon the original, as well as on the preserved quality of the cement, and on the certainty of a thorough mixture with the selected solid articles in proportion and manner first mentioned.

Well prepared *concrete sidewalks* seem to have conquered the field. They are very durable, and are not slippery. Their coarse groundwork rests on a bed of nonconducting material, preventing upheaval of the ground through an action of frost, and the finish is applied while the groundwork is still soft, in order to effect a perfect adhesion thereto. Good Portland is required for either of the layers, crushed stone for the substratum, uniformly fine

*See Addenda for explanation of this and similar references.

gravel for the rich finish. Parsimony on the part of the owner, avidity on that of contractor, combined with ignorance, as it may be, have spoiled a large number of concrete sidewalks.

What is said in regard to sidewalks is equally valid in regard to *floors within buildings*, excepting that "Jack Frost" may be left unconsidered. All such floors, when not located above warmed rooms, should be surfinished with a layer of nonconducting material, such as *asphaltum mixture*. This is most especially required in respect of cellar floors, which are in contact with the ground. Winter's temperature will cool them enough to cause a condensing effect upon the moisture contained in the warm air within the building. Dampness is the consequence. Goods are injured, and rheumatic and other complaints are liable to persons engaged in business on such floors.

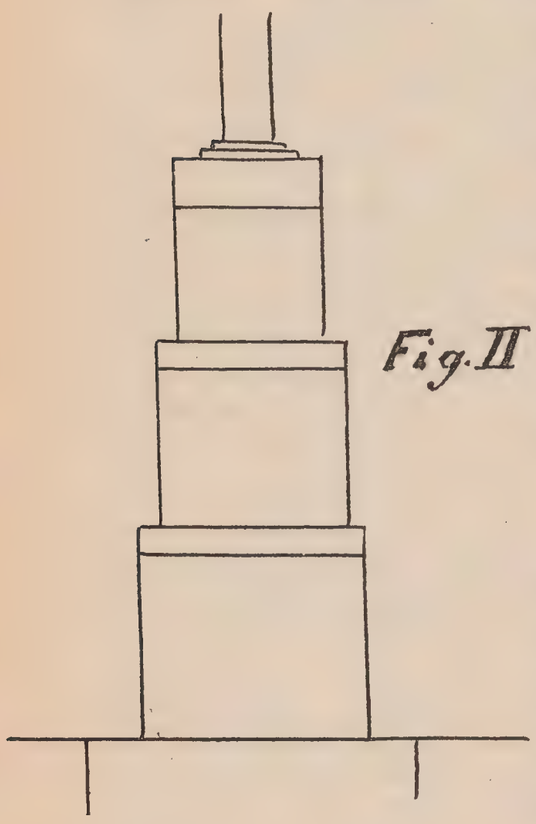


Fig. II

BRICKWORK.

The rules governing good brickwork may be found in the many volumes published which treat on building construction; they are but seldom well observed, especially at the present time, when it seems to be the aim and end of organizations to lessen the habit of industry, which ever has been the parent of well accomplished work.

Piers should be proportioned not lighter than one to six, and always be duly bonded by means of stone or plates of iron. Thus well built, with every third course bonded, hard brick being especially selected, they may be trusted with a permanent load up to 250 pounds per square inch of sectional area. In case the brick are of extraordinary hardness, the mortar employed is good Portland, and the mechanic one of the kind who can be relied upon, an extreme load of 450 pounds per square inch may safely be applied. There is, however, no need of going thus far in regard to the stability of brick piers. Iron or stone may be preferred (4).

Basement piers, for purposes of carrying loaded iron columns, may be built as shown by Fig. 2. The comparatively small capstone should in no case be less than eight inches thick and bedded in mortar spread on the center of pier so that the stone set thereupon may be moved to and fro till a perfect bed is obtained. Both the narrow size of the stone and its perfect bed are the agents which keep it intact (5).

STABILITY OF BRICK WALLS.

A free-standing brick wall, ever so well built, as well known, is of questionable stability, especially so when green. Its thickness should be great, its height small. The stability is subject to the formula $\frac{W B}{P H h}$ in which W represents weight of one lineal foot of wall in pounds, B width of base in feet, P wind pressure in pounds upon a square foot of surface, H the height of wall in feet, and h the distance in feet of gravity-center from base. Accordingly a green perfect brick wall twelve feet high, two feet thick, acted upon by eighty pounds wind pressure, would be at the limit of resisting. Its adhesion to the base, as a strengthening factor, which it should be, can not be counted upon, since it is determinable only by experience and sound judgment.

It is obvious that the stability of two such walls, parallel with each other, and combined by means of a horizontal cover, so that but one of the walls is at a time acted upon by wind, will be twice that of single walls and not more.

A *free-standing* single building, therefore, is *of a rather uncertain stability*, so that foresight and circumspection are necessary requirements to its successful erection (6). The builder is bound to consider:

1. The varying factor of *adhesion of green mortar* to the brick. The better the mortar and the harder the brick, the more perfect the work and more assured is success, always provided that no untimely hurricane brings precautions to naught. Prior to laying floor joists the walls should be kept well braced. It should be kept in mind that the quickest-setting mortar is of the surest avail.

2. The *length of side walls from front to rear*. Sound judgment must govern the case. Long walls require to be thick, or else strengthened by means of piers or buttresses.

3. *Floor beams should reach into the walls*, the farther the better for stability of the building, as efficiently illustrated by Fig. 3. Appearance, however, forbids this in regard to iron floor beams on exterior walls; and the Underwriters justly forbid wooden floor beams to reach more than four inches into the walls, in order that during a fire they may drop without pulling the walls over. But the resting of the inner edge of the wall upon the joist, be it no more than two inches, undoubtedly is of advantage to the stability of a building when in its green state, as may readily be deduced from the illustration. Girders, especially so if iron, spanning from wall to wall, are likewise factors in the stability of a building, in proportion to their depth and to the extent of their bearing upon the walls.

4. *Anchoring*, though mainly of precautionary merit, also *adds in a measure to the stiffness* of a building. Each anchor acts as a sort of extension of the joist into the wall inasmuch as it is secured upon the same. Too solid and too frequent anchoring, however, interferes with the just demands of the Underwriters.

5. The immediate *covering of floor beams*. The narrower the building is and the deeper, the more indispensable this demand. Such covering, to be most effective, should be thoroughly nailed through the face of boards, in order that the floor may at once be a sort of horizontal truss spanning from wall to wall, from front to rear. Diagonal direction of the boards is preferable.

It is undoubtedly clear that the narrower and deeper a building, the greater is the risk, and the more indispensable are the precautionary measures to be applied during its construction. It is ordinarily not safe to erect a free-standing building of less than twenty feet wide and more than sixty feet deep, more than three ordinary stories high. If it is built with heavy walls, two more stories may *subsequently* be added, after the lapse of a few years. "Innocent" builders, however, have occasionally succeeded in erecting buildings of the kind five stories high. Æolus and Boreas had mercy on them and kept their winds under cover. Other builders have undergone heavy losses inflicted by high wind upon buildings carelessly deemed secure and left without the necessary precautions. It occurred even in the case of a fully completed building of about 50 by 120 feet, that its two upper sotries, which in height extended beyond the walls of adjoining buildings, were wrecked by the force of a gale. The walls were shoved some two feet out of plumb, and the building department ordered them to be taken down (7).

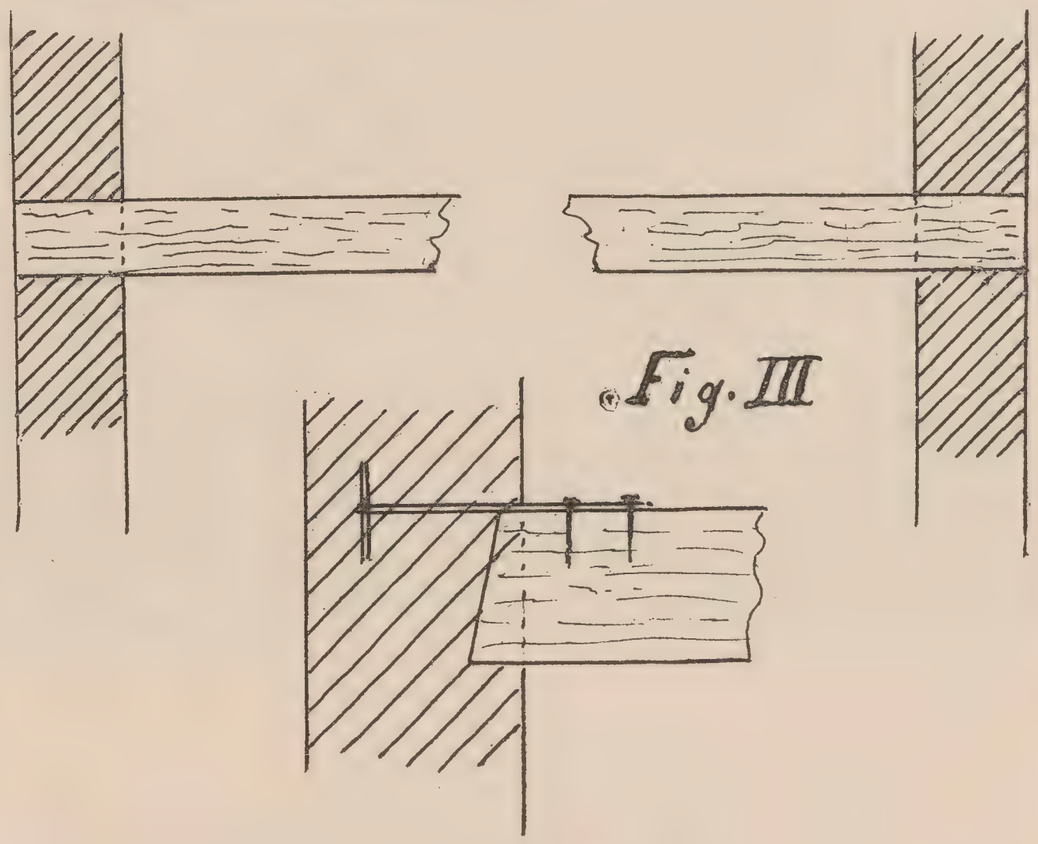


Fig. III

ADDENDA.

(1) In bygone times a mixture of common mortar with coarser materials was called concrete. Volcanic products, containing a large proportion of soluble silica, were now and then intermixed, as the case may have required. When the manufacture of natural cements had become established they were more and more largely used for obtaining a rapid-setting concrete. At last Portland took the place of all these intermixtures, so that I feel inclined to now confine the term "concrete" as indicated. Some forty years ago I received the publication of a French architect claiming to have erected walls, even such of large churches, and their ground arches, with mere common concrete. Probably the sand there had contained a fair proportion of soluble silica.

(2) It is required that the ground be solid upon which concrete is made, especially so where it is subjected to heavy loads. Some time ago the director of a reaper factory had large buildings erected for purposes of spinning twine.

The light machinery was placed upon a concrete floor built under his own direction and supervision. It broke through, causing endless trouble and expense, because the main feature required was not guarded. The contractor had but stamped the filling under the concrete in an ordinary manner throughout, instead of specially taking care of the places where the machines were to be set. He had not been so directed. There was an architect employed on the erection of these and other buildings. His counsel was not invited, as to this concrete, for the only sake of saving a few hundred dollars' commission. The result was damage to an extent of ten or twenty thousand dollars, and a botched piece of work in the bargain.

(3) It seems to be difficult to convince owners of their true interest in regard to cases of the kind. In spite of any warning, in two of them it was decided to be satisfied with mere concrete for a basement floor. The result in both cases was that in the following winter and spring the tenants complained in a manner to cause the floors to be surcovered with wooden material. Thus poorer floors were obtained at an extra expense. Floors of bakeries in particular should be concrete covered with a layer of proper asphaltum, or tiles prepared of nonconducting material (compressed papier-maché), the cool dampness of mere concrete floors being apt to cause rheumatic and other complaints.

(4) Brick piers, poorly built or heavily overloaded, have repeatedly been the cause of collapses or troubles. The A B C of the building art, simple as manifestly it is, does not seem to enter the mind of even men who, in other matters, may be distinguished for sagacity. A citizen of this sort built a large hotel, some ten years previous to the great fire. The side wall of the dining-room adjacent to the central court was built with six piers about eighteen feet from centers and light iron columns between. Each of the piers was 21 by 21 inches, 11 feet high, carefully built with Milwaukee brick, though without bondstone. It carried the main pier of the dining-room, and one end of the truss which spanned across this room carried partitions of five upper stories. My judgment at the time was that the entire load upon each pier was, inclusive of plastering, about eighty tons. All went well till the plasterers' hard-finish was applied. This appeared to have acted like the proverbial last straw upon a camel's back. Three of the piers began to split. Immediately the "screw doctor" was summoned to the spot. The three sick piers were substituted with cut-stone piers. But, remarkable as it seems, the other three piers, equally loaded and, therefore, equally sick, though not telling this by visible signs, were left in their condition. The fate of the building and the lives of scores of its inmates were left suspended on the "strength of a hair"! And this by men of reputed sagacity, each of them of old American parentage. All went well till, *nine years* subsequently, on a Saturday morning, two of the original piers were found cracking. Shores and screws were applied in all haste, so that by the next morning the propping was fairly accomplished. And this time again the "doctor" was discharged without attending to the remaining south pier, which — probably somewhat lighter loaded than the others — remained intact till the great fire destroyed the building. Area of pier, 442 square inches; load, 160,000 pounds; load, per square inch = 362 pounds. Had these piers been built with selected hardest brick, and bonded twice with stone or iron, they would have stood. As they were, their practical load should not have been more than twenty-five tons, if as much.

(5) A few years ago an "accident" occurred at a building in course of erection. Four stories high, it was divided by a brick wall extending through the three upper stories, sustained by iron columns, which on their part rested on large brick piers faithfully calculated as to size for bearing the load. But the capstone was cracked on most all of the piers. Two of them were disintegrated, causing collapse of the building. The piers were built plumb, with capstones too large in proportion to the plates which carried the columns. In addition to this they were not bedded with the care requisite.

(6) In 1856 I tried to erect a five story building twenty feet wide, eighty feet deep. For precautions both side walls were strongly braced within each story. The building was under roof, and the braces on first floor had been removed for purposes of laying the floor. All on a sudden a gale set in, rocking the whole building like a cradle. It stood for an hour, and then went bodily over, happily upon a vacant lot. It may be doubted whether it would have fared better, in case *all* braces had been in position, even if all floors had been laid. An undertaking of the kind is practicable only for one who is innocently favored by good luck.

(7) This order appears to have been an arbitrary measure on the part of the building department. It is not difficult at all to shove such walls back into proper condition, and keep them braced for a fair length of time, till the masonry has been firmly set. I know of several cases thus treated with success. In 1856 I erected a building, 22 by 80, four stories high, located at a northwest corner. It was partly shielded by an adjoining two-story building. A few fierce gusts of wind accompanying a thunder-storm, however, knocked the walls some two feet over. The screw doctor not yet being in business at such early date, I had braces set within, and readjusted position by means of wedges.

TRUTH IN DESIGN.

BY GEORGE W. MAHER, ARCHITECT.

A LIVING architecture must express motifs kindred to the life around it. It must be a part of the mind of the community, in its simplest and most expressive form. It must be a clear statement of fact, free from ambiguities and vain wordings. It must be ideal in its purity and loveliness.

Originality is desired in the composition, but all tending toward the union of utility and the beautiful. Uniqueness is also desirable, but perfectness of composition, richness and elegance are more to be desired.

Any motif from a foreign source should be carefully weighed before its adaptation; its reason for existence may have long since departed, and its use today be a catering to delusion, vanity and untruthfulness.

Our present life is reasonably free from the shadow of superstition, therefore our buildings should portray no demons or vagaries of an unknown world.

The trend of thought is for clearness and simplicity of argument, scientific in all its dealings, therefore our motifs should be clear and thoughtful, of an exalted character, that will not offend the conditions of society. No styles of foreign countries should influence or degrade our twentieth century dictation. No follies of tolerate kings should rule our independence or freedom. What vauntings of those under its spell should compel us by wording arguments to be other than what we are, for we are what we are, and we grow from the soil in which we were planted. And who can gainsay? We can be neither Greek, Roman, Italian nor French, and all aping that shall be attempted degrades us to the extent of the closeness of the imitation. No beautiful example plagiarized does a whit of good. It pulls down conscientious endeavor, it makes our civilization a mockery, a slave to precedent. Let our first endeavor be chaotic, if need be, in order to found a beginning; far better thus than to use others' cast-off raiment.

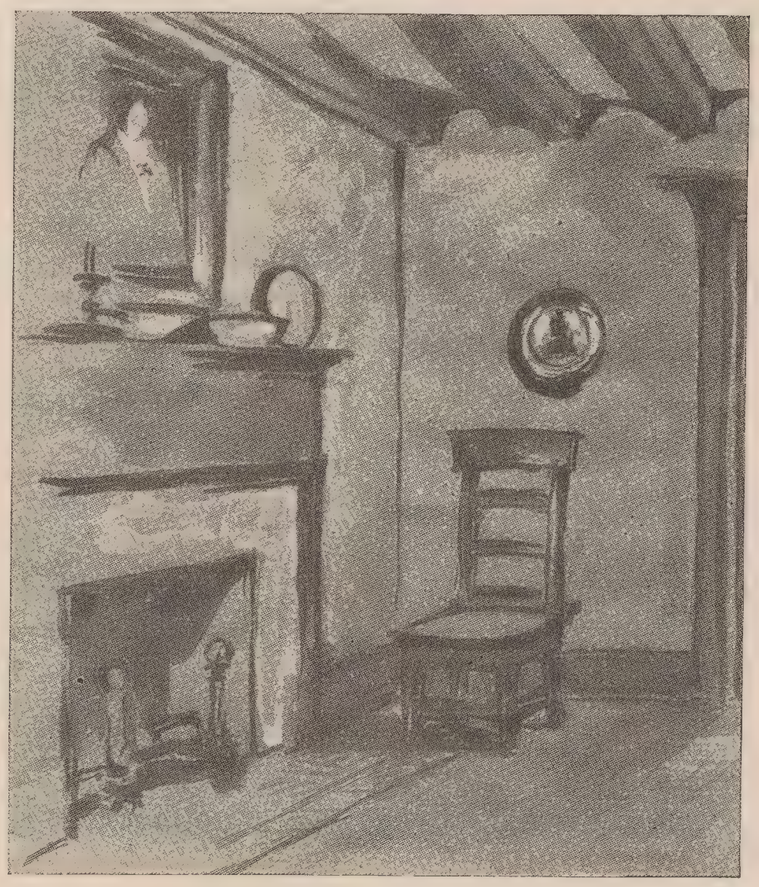
We must have visions and things ideal. Our work must also express the living want, it must meet present conditions and not be fettered by the unalterable past. Evolution thus dictates to mankind — Progress is the watchword.

The principle of all work is truth, it is eternal. In all great results truth has dominated, and the closer the result to perfection, the nearer it has been to the truth. Rather strive for this great motif than the copying of a material result. No work without it is worth a second thought.

The Parthenon expressed a great truth when associated with its life and purpose. But the Parthenon duplicated in a foreign soil, to meet the present-day conditions, would be unexpressive and untruthful. The principles which form the basis of the construction of the Parthenon are for us to embrace and to use on all occasions. The Greeks and Goths were lovers of truth and their creations will live. Shall we Americans follow after the footsteps of truth, which rise from our conditions of life and environments, or shall our eyes be dimmed with the lust of imitation and deceit?

THE T-SQUARE CLUB EXHIBITION.

BY HERBERT C. WISE.



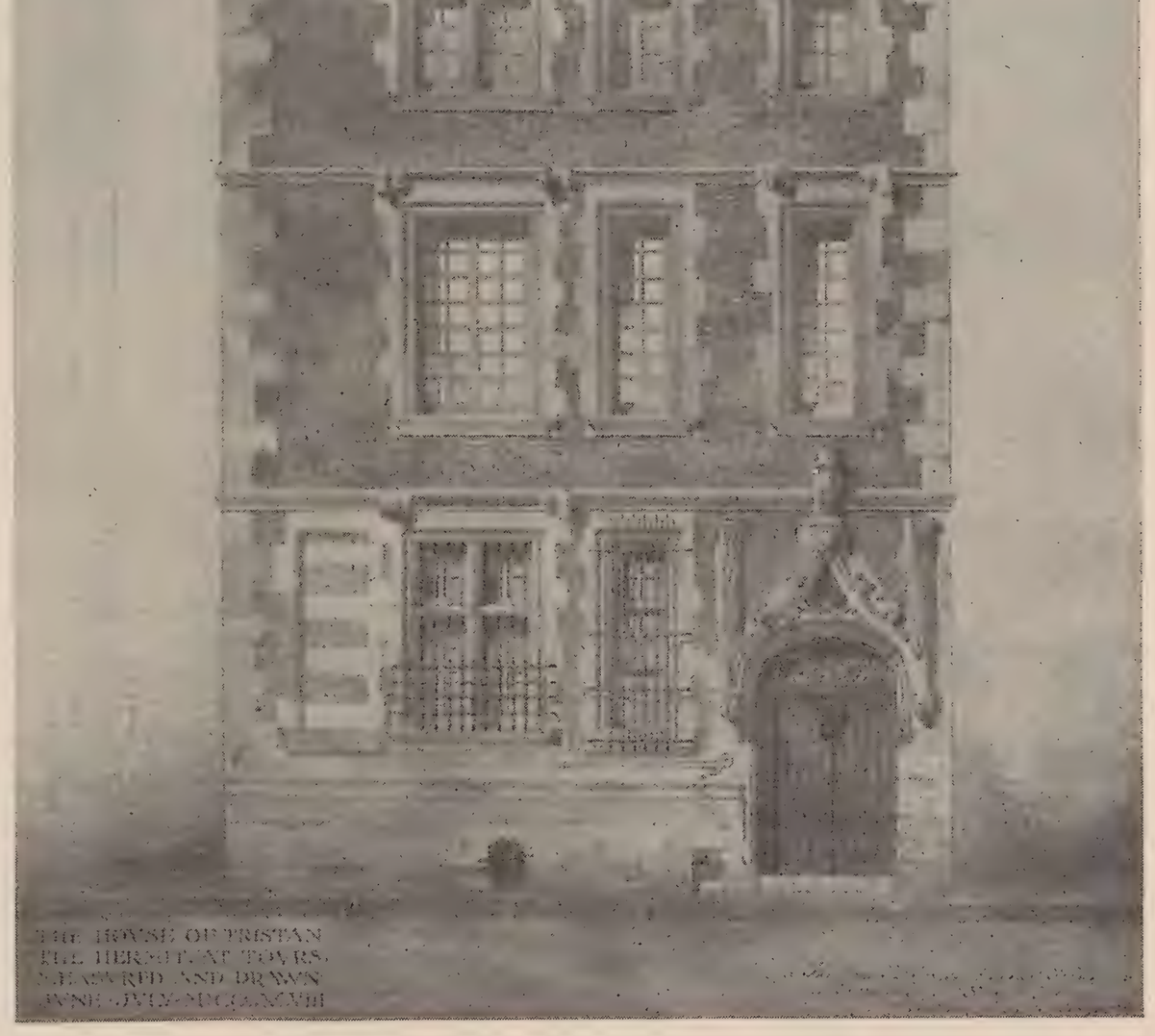
A SKETCH BY W. EYRE, JR.

FOR the first time in a number of years the T-Square Club of Philadelphia holds its annual exhibition entirely under its own auspices. In the early days of the club one or two very modest exhibitions — with few contributions outside of its own membership — were held in the gallery of the Art Club on Broad street. Later the yearly collection of drawings was hung on the more spacious walls of the Pennsylvania Academy of Fine Arts, in connection with that institution's annual exhibition of paintings and water-colors. This winter marks the inauguration of the exhibition circuit of the Architectural League of America; and the T-Square Club has the honor of first opening the series of

exhibitions which are to take place in New York, Chicago, St. Louis, Detroit, Cleveland and Pittsburg. With this honor comes the work of kindling a greater and greater public interest in the productions of the architectural profession. With its productions, upon paper at least, the ignorant apathy of the public is well known. A local newspaper heralded the exhibition thus: "Last night the T-Square Club opened its itinerant show." Let us be charitable and think the reporter's appreciation of architectural design to be surpassed only by his shrewd knowledge of the public. At all events the public has come to see the "itinerant show," and though the marionettes and jingling bells were missing, the vistors have not gone away with disappointment upon their faces.

On the contrary, there is less of architectural magic and hocus-pocus in this collection of drawings than we have seen in preceding ones. The Art Club's generous offer of its gallery has been accepted, and by means of screens the five hundred drawings have been conveniently arranged. The huge stretches of elaborate projets are not to be found here. The practice of impressing the importance of actual work by the square feet of Whatman seems to be passing. Instead of recoiling before expanses of French blue, we are led to smaller and less pretentious drawings, which show no less work and often more of serious study. About one-fourth of the drawings are the work of foreign architects. In these the English predominate, for there are only fifteen drawings from France. The former, with very few exceptions, have sent domestic designs. The interiors, by Mr. G. Aitchison, Mr. Belcher's Guildhall, like Mr. Newton's and Mr. Mitchell's charming dwellings, all look as if they were meant to be built. In fact, as we look at them we can not imagine any obstacle in the way of it, and we fancy next year we shall have photographs of them all, in addition to many more new drawings. Besides the architectural merit of the subjects themselves, the drawings by Mr. T. Raffles Davison and by Mr. Joseph Pennell add largely to the exhibition's wealth of rendering. The interior and exterior views by Mr. C. R. Ashbee, as well as several drawings by him of detail in metal and wood, are highly individual and show a rare character and refinement. We are fortunate in having such an interesting feature in our exhibitions as this simple and refined work of our cousins across the sea. Our interest in their creations is so keen as we see the similarity between the traditions and requirements in their country and those in ours. The work is unpretentious and yet dignified; it demands but little paper and wall to show itself; it reveals no void between the conception and the execution; it contains the probable as well as the possible; and it is unconscious to a degree, for it is known that some of England's foremost designers consider that the Americans surpass them in domestic work.

Among the French drawings, the "Door of the Hotel de Ville at Toulon," by Mons. L. Daméuil, is a superb rendering of a vigorous design. The "Chimney in a Hunting-Lodge," and a "Panel between Windows," by Mons. Tony Garnier, are also strongly rendered.



MEASURED DRAWING, BY WILLIAM CHARLES HAYS, PHILADELPHIA.

The most important French work is seen in the Phœbe Hearst Competition for the University of California. Naturally enough, the interest of the profession is now centered upon this result of a most liberal competition. Photographic enlargements, about 3 by 4 feet, of the plans and perspective views, have been loaned by the regents of the University. The prize drawings have the following authors: E. Bénard, Paris, first prize; Howells, Stokes & Hornbostle, New York, second prize; Despradelles & Codman, Boston, third prize; Howard & Cauldwell, New York, fourth prize, and Lord, Hewlett & Hull, New York, fifth prize.

The problem has been to start at the ends of two main avenues leading from the center of the city of San Francisco; to carry a principal group of buildings upon one or two axes to the base of Berkeley Hill, which dominates not only the University's land, but the city itself; then to ascend the hillside by steps and terraces to a surmounting building near the summit. Some of the plans effect this with one axe leading straight to the hilltop; others accomplish it with far more irregularity. M. Bénard's scheme consists of a principal axe which extends from the avenue entrance to a plaza at the base of the hill. Abutting normally upon this line lies a secondary axe, which carries a very satisfactory arrangement of the gymnasiums and athletic field. From the center of the plaza the main axe makes an angle and ascends the hill by terraces, the carriage drives lying apart and following the flank of the hill au naturel, like the approach to a mediæval town. All the buildings are by no means confined to the axes mentioned; and only an examination of the many secondary and service buildings outlying the main group gives some idea of the scope and completeness of the proposed scheme. While the plan of the work is of the first importance at this stage, it is to be hoped that the separate buildings, when they come to be drawn, will assume a character more in keeping with our American ideas of a students' home. To create a university atmosphere upon the scale of an exposition is not an easy task.

The second holder of the John Stewardson Memorial Traveling Scholarship, Mr. William Charles Hayes, contributes forty-one drawings made during his term abroad. The twelve-hour sketch designs in pencil and wash made in the ateliers of Godefroy et Freyult and M. Laloux, show how profitably the traveling scholar may spend his time when he is not compelled to follow beaten tracks already over-traveled and over-described. A measured drawing of the Palace of the Domitian on the Palatine at Rome,

and a restoration plan and elevation at one-eighth scale; a measured and beautifully rendered façade of the House of Tristan at Tours; and a line drawing at three-inch scale of a monument in S. Maria del Popolo, at Rome, are in this envoi collection.

Mr. John Russell Pope sends a brilliant école drawing of a well in the courtyard of the Hospital St. Jean d'Angers, and Mr. Henry B. Pennell has entered several very rich interior views in color of churches in Italy and Sicily. The mural studies by Mr. D'Ascenzo and Mr. Farrady are the foremost under the head of decoration and the allied arts, of which the number of specimens is unfortunately somewhat meager. Of the more important American work are two designs submitted in the competition for the New York Customhouse, a block plan from the Washington University competition at St. Louis, sketches of detail for the Pan-American Exposition at Buffalo, a perspective of the Worcester County Courthouse and one large elevation of the Agricultural

WOMBOURNE WODEHOUSE, ENGLAND.—C. R. ASHBEE, ARCHITECT.

building at the recent Omaha Exposition. Philadelphia is well represented by some charming pastel and color drawings of executed work by Mr. Nilson Eyre, Jr., several views of the new dormitories of the University of Pennsylvania by Cope & Stewardson, photographs of residences, by F. M. Day & Brother, and sketches by Messrs. Githins, Bissegger and Morris.

The collection of drawings from the Pittsburg Architectural Club forms a distinct group in the exhibition; as, likewise, do the contributions from Columbia, Cornell and the University of Pennsylvania, the Drexel Institute and the Pratt Institute.

There have been years when many more drawings have been displayed and where there was a greater variety of subjects; but, for a purely architectural exhibition — which this avowedly is — the standard of work and the general character of the designs are excellent. Were it not for an unforeseen lack of space the number of drawings hung would have been larger. The earnest efforts of exhibition committees have not yet been able to surmount all obstacles. That many of these have been overcome by the T-Square Club is certain; and the Architectural League of America may congratulate itself upon the exhibition which has just started upon its journey from Philadelphia.

CASS GILBERT'S NEW YORK CUSTOMHOUSE DESIGN.

ARCHITECT CASS GILBERT, whose design for the New York Customhouse has been accepted, has furnished for publication the following information bearing on the design and requirements of the building. His efforts have been to provide a monumental building adapted to the practical needs of the Government, and that can be built for the appropriation:

Having carefully studied the program of the competition and the very admirable general scheme of the building proposed by the Department, as well as the practical requirements of the business carried on in the present customhouse, I have endeavored to fulfil all the conditions as closely as possible, and have also provided a very large additional space for the future needs of the business.

IN GENERAL.—The building being necessarily complex, and having many parts and divisions, which must be corelated in such a manner as most effectively to serve the public business, I have deemed it most important that all entrances, corridors, stairways and passages be arranged on the most direct and simple axial lines, and that each division should have its principal entry at or near the entrances or elevators.

MAIN DISPOSITION.—I have followed the main disposition of the mass of the building as suggested in the plat accompanying the program, namely, a building facing on Bowling Green with two wings extending along State street and Whitehall street respectively, the ends of these wings being connected in the basement, first and second stories on the south front, so that the great central court is open to the south (these wings are also connected by corridors across the center of the building in each direction in the above-named stories).

This general form permits a plan whereby every room in the building will be directly lighted from the outside, the court being open to the south, and every room facing on it (and in fact every room in the building except on the north front) will receive the direct rays of the sun for at least a portion of each day.

In the center of the court I have placed an elliptical rotunda which rises to the height of the second story only.

LIGHTING AND VENTILATION.—The lighting and ventilation of a building for the use of so many persons is of the first importance, and has been thoroughly provided for. There is no question that corridors are more satisfactorily lighted by diffused light, equally distributed, than by direct lights at specified points only. I therefore have arranged to light all the corridors by partition lights, as is the custom in all modern office buildings, reserving the outside direct light for the offices.

I have enlarged the window openings in all *court walls* to the *maximum*, and call especial attention to this as an important practical feature in the design, providing as it does the amplest natural light, without impairing the robust and monumental character of the street façades.

As all of the offices have windows opening directly on the outer air, the natural ventilation of the building would be effective. There would be, in addition, a complete system of mechanical ventilation, operated by pressure and exhaust fans, in the most thorough and approved manner.

ENTRANCES.—The first story is placed within eighteen inches of the ground level at Bowling Green. There are six different entrances from the street, with an ample stairway rising in easy stages to the second or main story. The two entrances on the south front are placed at the ends of the postoffice, so as to provide separate direct access thereto from the street; they may be used in connection with the general corridor system.

DIRECT PASSAGE.—I have provided a direct passage across the building from Whitehall street to State street, with an entrance in the east and west façades, at the sidewalk level.

DRIVEWAYS.—There are provided two driveways, each entering on an inclined plane, of easy grade, on the south side. These driveways descend to the basement level without interrupting the corridors or circulation in either story, and provide access for mail wagons, stationery supplies, fuel and other customary freight service incident to an office building.

STAIRWAYS.—The public stairways are placed in direct connection with the entrances, the service stairways for the various divisions as near the center of the service as possible. The stairways would all be constructed of iron and marble, except the stairway in the main entrance, which would be of stone and bronze, and all detail of rails and finish to be of appropriate and ornamental design.

I have purposely avoided great monumental stairways between the various stories in this design, believing them not contemplated in the program, and wholly out of place in a building so largely devoted to business affairs; moreover such stairways would interrupt rather than facilitate communication between the various parts of the building, and would occupy space which should be devoted to other purposes; if, however, the Department should desire monumental stairways, it would not be difficult to slightly rearrange the plan of the main hall so as to permit such a feature.

ELEVATORS.—The public elevators are so placed as to be near the entrance and to give the most direct service. Separate elevators and lifts are placed in connection with the stackrooms; all of which, together with an extensive pneumatic tube service, would give the most complete mechanical equipment in this respect.

GENERAL DISPOSITION OF DIVISIONS.—The accompanying schedule of rooms and floor space will, with the plans, give the general disposition of the various divisions.

I have deemed it highly important that the first, second, third and fourth divisions should be placed on the same floor with the Collector of Customs; the very close relation of the business of these divisions to each other, and the Collector's office makes it most desirable that they should be on the same floor if possible. As these divisions require a large floor space, I have assigned them to the second or principal story and placed the rotunda at this level; this permits the closest centralization, and while making them all immediately accessible to the brokers, shipmasters, and that portion of the public who daily transact business in these divisions, they are in a measure isolated from and uninterrupted by the very large number of the public and of the employes of other divisions passing through the building or using the elevators between the various stories.

ROTUNDA.—Should the Department, however, prefer to locate the rotunda at the ground-floor level, it could be done by a reassignment of space, without material alteration of the plan, though after a careful study of the operation of business in the Customhouse I am convinced that the arrangement I have proposed would be more serviceable.

RECORDS.—I call special attention to the placing of the records for the various divisions, and the notes referring to this matter in the schedule of floor space herewith; the same general remarks apply to all record storage departments. In general I have considered the storage of records analagous to the stackrooms in a great library and have so treated them, placing the records of each division under the charge of a bureau of distribution and control, with a complete service of elevators, lifts and pneumatic tubes. It is obvious that this system can be greatly extended if the business in the future demands it.

OFFICE SPACE.—A comparison of the schedule of rooms and floor space will show that all the requirements of the program have been filled in this regard.

RESTUDY.—I would say that, while the details have been carefully considered, it is inevitable that in many respects, both in plan and exterior, they could be improved by restudy in direct conference with the Department should this design be selected.

FINALLY.—It appears to me most desirable that this building, located upon a conspicuous site, at the beginning of the greatest street in the world; at the entrance of the greatest port of our country, should be given a serious and dignified style; and that the *scale should be large, even grandiose*, while not attempting to compete in height with the towering structures near by. It should be so impressive by reason of the majesty of its composition, rather than its *actual* size, that it should be truly a monument. It has been my sincere effort to produce such an effect without sacrificing the use and practical necessities of the structure.

While giving full attention to practical features of the building, I am confident that the Secretary of the Treasury, who has always been so distin-

guished in forwarding the advancement of architecture in this country, will not be unwilling to let this, the greatest of the new structures inaugurated under the present administration, express, so far as may be, the character which is appropriate to a great Government building.

The award of the expert commission appointed by the Secretary of the Treasury to pass upon the merits of the design in the competition for the New York Customhouse, was approved by Secretary Gage in a letter dated November 3, 1899, appointing Mr. Cass Gilbert architect for the building.

Since that date Mr. Gilbert has been in conference with the officials of the New York Customhouse, and with the Treasury Department in Washington, in regard to the assignment of space, and the development of the design in its various phases. At the same time the Treasury Department has prepared the contract between the architect and the Government, which was signed and delivered January 29, 1900, the design having been previously approved by the Cabinet Board, which consists of the Secretary of the Treasury, Postmaster General, and the Secretary of the Interior.

A description of the structural features of the building, and of some of the most important points, is given in the document which accompanied the competitive designs. In discussing the work, Mr. Gilbert says:

"In making these designs the problem was considered from a serious standpoint. It is a great Government building, which, while having a definite practical purpose, should express in its adornment something of the wealth and luxury of the great port of New York, and have a dignity appropriate to a notable public monument. That it should be sincere and straightforward in this expression, is an element of the first importance. For instance, a vast dome evidencing a great place of assemblage, an enormous columnar portico, excluding light from the interior, and many other such customary architectural motifs were, in my opinion, wholly out of place in such a structure, and therefore false in expression, and for this reason not attempted. It has been urged since the competition (by some sincerely, by some otherwise) that this building should have a dome. I have not considered this as serious enough to warrant a reply hitherto, but may as well express my views thereon at this time. The dome having been suggested, it is urged that it would be a landmark rising above the neighboring buildings, to be seen from a great distance. If such a 'landmark' were built, it would have to begin about 300 feet in the air, and rise to a height of at least 450 feet in order to be effective as a 'landmark'; this would wholly destroy the proportions of the building *per se*, and as a matter of plan, seriously impair its practical usefulness. It would at the same time be wholly false as an expression of the use and purpose of the structure, besides increasing the cost enormously beyond the appropriation. If a 'landmark' is necessary, it is possible that a great tower rising from the north side of the court could be adapted to the design, and might provide for record storage, Signal Service and Weather Bureau. Such a tower would probably be about 400 feet high, and would add considerably to the cost. Viewing the problem from the standpoint of the requirements as stated by the Treasury Department, all of which are reasonable and based on common sense, and with a view to the amount of money appropriated for this structure, such features may well be questioned.

"The building will be six stories high, not including the basement. It will be massive in design and construction, and will provide ample space for the present business of the customhouse and for its future extension. In short, the new building will provide nearly three times the space at present in the old customhouse, and in the buildings outside of it, which are rented for customhouse purposes.

"There will be seven stories opening on the court, and some of these stories will be subdivided by mezzanines. The storage of documents and files will be in mezzanine stories and will be under the charge of a bureau of distribution and control. They will be handled like the stackroom of a public library.

"The problem of designing a monumental building of six stories or more in height is considered a very difficult one by all architects, especially so when, as in this case, it is necessarily full of requirements of a practical kind which must be met. It was thought best to make the design massive while very simple in its outlines; not attempting to compete in height with the neighboring structures. Its monumental scale and massive proportions will make it appear more imposing than the lighter, though higher, buildings around it.

"The interior of the building will be handsomely finished, and will be entered through a great vestibule thirty-five feet high; thence into a noble corridor extending through the front section of the building. This, with the elliptical rotunda, will give a fine effect to the interior.

"The building will be suitably adorned with sculpture and decorative painting of a high order. The four great seated figures at the base of the main façade will typify the four great continents which contribute to the commerce of the world, namely, America, Europe, Asia and Africa. The single figures above the main cornice will typify the great commercial nations of the world. The decorations of the interior will illustrate the commerce of ancient and modern times, both by land and sea; thus providing a series of themes of great pictorial interest appropriate to the structure.

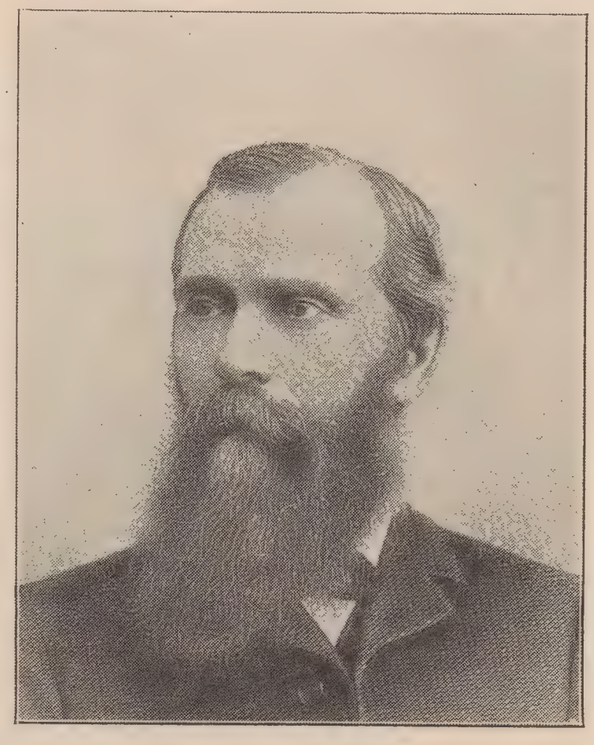
"The work of clearing the site will be begun at once, the contract having already been awarded. This work will be complete within ninety days. Contracts will then be let for the excavation and foundation work, which will require several months; and the general contract for construction will follow immediately thereafter.

"The appropriation is $3,000,000, of which amount about $2,750,000 is assigned for the construction of the building proper.

"I propose to keep the cost of this building within the appropriation, and will do so unless unforeseen difficulties in the foundation are encountered, or the Government itself increases its requirements. To do this will require careful business management. Strict economy will be observed in all directions, but I am satisfied that the present appropriation is sufficient for the needs of the building as now planned, and that neither the Government nor the city of New York will be ashamed of the result."

DEATH OF GEORGE TAPPER.

GEORGE TAPPER, builder, of Chicago, died at his home at Riverside, Illinois, on January 9, 1900, at the age of sixty-five. Mr. Tapper was born in Devonshire, England, on May 29, 1835. He learned the mason trade from his father, and leaving England in 1852, came directly to Chicago, where he secured employment at his trade with William E. Mortimer, who had come from England a short time before. Subsequently Mr. Tapper was taken into partnership, under the firm name of Mortimer & Tapper, a name that until the dissolution of the partnership in 1894, stood for everything that was sound, competent and reliable beyond all question in building circles in Chicago. Every extraordinarily difficult piece of construction, particularly at the first appearance of the high building era, was entrusted to the firm, the first three, the Monadnock Block, Calumet building, and Home Insurance building, the first of the "high" buildings, built in the order named, were erected by them. The temporary illness of Mr. Mortimer led to a dissolution of the partnership, and subsequently Mr. Tapper erected the Chamber of Commerce building, under the most peculiar conditions, and with a success so signal that it marked to those who observed the work the evidence of a master mind in all details of construction.



GEORGE TAPPER.

He retired from active business about five years ago, but was too active a man not to be interested in the problems of his former associates, and give freely of his knowledge to those who sought him for advice.

Mr. Tapper was known to contractors throughout the United States, through his service as treasurer of the National Association of Builders of the United States, from its inception, thirteen years ago, until the last convention, when, through his request, the office was combined with that of the Secretary. Throughout his forty-five years of active work in Chicago, Mr. Tapper was a peer among honest men. His contracts were always carried out, his judgment always conservative and practical, and the resolutions of regret passed by the Chicago Builders' Exchange and the Builders' Club, both of which organizations he had served as officer and director, in but a small degree evidenced the loss which his death brings to the building interest. Such a man as this makes many friends, and to them who miss his face and the sound of his kindly voice, there is a deeper note of sadness, and a regret that is not spoken, but is a most real tribute to the rare excellence of the life that he lived.

PAINTS IN ARCHITECTURE.

THE COLONIAL STYLE.

THE partial revival of the Colonial style in architectural forms has necessitated a more liberal use of white paint and light tints. At one time, perhaps ten years since, white and tinted enamels for interior use promised to assume the proportions of a "fad," and exteriors painted in unbroken white became quite familiar. But the difficulty of obtaining a hard-drying white varnish militated for a time against the adoption of enameled interiors and the susceptibility of white lead to the darkening effects of the sulphur gases everywhere present has retarded the return to pure white for exterior protection and decoration.

The difficulty with enamels has been overcome by the varnish-makers, and enamel interior painting, even including minor articles of household use, is now very general. These enamels are usually based on a combination of fine zinc white and a very pale hard-rubbing varnish, and are everywhere obtainable in any tint and in any quantity.

But for exterior finishing the original difficulty still remains—pure white lead will not hold its color; and many painters and

consumers are uninformed as to the availability of any other white pigment. Among the better informed, however, it is a familiar fact that in the better grades of combination paints, in which the lead is protected by a large admixture of zinc white, we have a variety of white pigments, very pure in color and exceedingly durable in substance, which retain their original whiteness for many years.

There is a custom prevalent, to some extent, of laying on foundation coats of pure white lead and finishing with a coat of pure zinc white. Others make it a rule to start with a priming coat of pure lead, followed by a second combination coat of zinc and lead, and finished with a coat of pure zinc white.

Theoretically, at least, these methods are faulty, since it is almost axiomatic that a hard-finishing coat should not be laid over a soft under coat. Comparing a number of examples of the various methods in different parts of the country it would probably be found that the most satisfactory results are obtained generally by the use throughout of a first-class combination white containing a liberal proportion of zinc white.

Doctor Dudley and Professor Pease, of the Pennsylvania Railroad, in their papers on the subject, published some years since in the *Railroad and Engineering Journal*, recommended as the best practice the combination of white lead and zinc white in equal volumes, with the subsequent addition of as much inert pigment as can be introduced without affecting the purity of the color; and the common judgment of paint manufacturers corroborates this conclusion. CHARLES JOURDAIN.

OUR ILLUSTRATIONS.

Selections from T-Square Club Catalogue of Exhibition of 1899-1900.

Accepted design for Church at City of Mexico. Adamo Boari, architect, Chicago.

Residence of Mrs. Abby Thompson, New York city. Montrose W. Morris, architect.

Building for the Society for Prevention of Cruelty to Children. Brooklyn, New York. Montrose W. Morris, architect, New York.

Competition for the Customhouse, New York city. Accepted design by Cass Gilbert, architect; design submitted by Carrère & Hastings, architects; design submitted by Robert W. Gibson, architect; design submitted by Trowbridge & Livingston, architects.

Photogravure Plate: Residence of Mr. Muhlhauser, Cincinnati, Ohio; Des Jardins & Hayward, architects.

PHOTOGRAVURE PLATES.

Issued only with the Photogravure Edition.

Residence of Mrs. Amalia Schloesser, Chicago. W. A. Otis, architect.

Residence of S. Bing, Cincinnati, Ohio. Des Jardins & Hayward, architects.

Residence, J. Leslie Miller, Cincinnati, Ohio. Des Jardins & Hayward, architects.

Residence, George Hoadley, Jr., Cincinnati, Ohio. Elzner & Anderson, architects.

Residence of L. G. Banning, Cincinnati, Ohio. Elzner & Anderson, architects.

Residence of Joseph Theurer, Chicago. Richard E. Schmidt, architect. Two views are shown; exterior and detail of porch.

MOSAICS.

THE skeleton of a Mastodon was recently unearthed under the following circumstances: The Chicago, Burlington & Quincy Railroad is spending in the neighborhood of two million dollars in reducing grades and straightening curves on its main line between Chicago and Omaha. At Rome, Iowa, the line crosses the Skunk river, and there a gang of men have been employed excavating for the foundations of a new double-track iron bridge. At a point fifteen feet below the river bed, under the quicksand and just above the blue clay strata, foreman Peter Mattson came across a T-shaped bone three feet high and four feet eight inches wide. It was taken out and carried in the tool car to Batavia, where it now is. Those who have since examined the bone pronounce it to be undoubtedly part of the skeleton of an animal of prehistoric times, probably that of a Mastodon.

THE Jury of the Section of Architecture for the Paris Exposition has decided, in view of the very restricted space limitations, which only give to the United States exhibit about 200 square feet of wall space, to make an exhibit of photographs, or rather photographic reproductions, uniform in character and arranged symmetrically as to size and as to framing, believing that by this method a sufficient number of examples can be shown to make the exhibit representative of the best American work. The fact that this alcove adjoins other alcoves in which black-and-white drawings are to be hung will make such an exhibit all the more attractive. The Jury of Selection is as follows: John B. Cauldwell, Director of Fine Arts; William R. Mead, chairman; John M. Carrère, secretary; Robert S. Peabody, Frank Miles Day, Cass Gilbert, Walter Cook, Charles I. Berg. The exhibit is divided into the following classes: Office Buildings, City Houses, Country Houses, Public Buildings and Buildings of a Monumental Character, and Sundries.

NEW PUBLICATIONS.

A TREATISE ON MASONRY CONSTRUCTION. By Ira O. Baker. Ninth Edition. New York: John Wiley & Sons, 1899.

It is some ten years or so ago since the first edition of this work was published. It soon, deservedly, took its place as a standard work. As we recollect we made a favorable review of it at the time. The present edition is the same work substantially, but has been revised and enlarged so as to bring it up to date by the addition of a chapter, and various changes and additions throughout the book. Not much more can be said of this work than we have already said except to say that it maintains its reputation. It is to be especially valued for many references made to work actually executed and the information and rules to be derived therefrom.

"A MANUAL OF USEFUL INFORMATION" is the title of a book published by the Werner Company. Information means intelligence, notice, news or advice, but it may not always be of a useful quality. In compiling this volume the publishers have gathered a large amount of knowledge that is of use in every-day life, and should be possessed by all who desire to be well informed. It covers the subjects of Facts About Our Country; Time and Its Landmarks; Language, Its Use and Misuse; Poetry and General Literature, Mythology and Folk Lore; Money and Finance; Politics and Statecraft; Health, Hygiene and Physiology, and many other topics equally instructive and interesting. The book is unquestionably one of the best of the kind ever published.

THE FIREPROOFING OF STEEL BUILDINGS. By J. K. Freitag. New York: John Wiley & Sons, 1899. Price, $2.50.

The subject of fireproofing of buildings, though it has always been of interest, since the erection of iron or steel skeleton buildings, has become of much greater importance than formerly. It is only recently that there has come into existence any considerable literature on the subject, and this literature is to be found in technical journals, monographs, catalogues, etc., and notably the reports of tests made by the British Fire Prevention Committee. The present book is the first one that has collected such scattered information, and has given a tolerably complete, though not an exhaustive, statement of the subject in general. The author begins by giving a historical account, and then follows its development. A considerable portion of the work is devoted to the tests of fireproof material, and also of the fires that have actually occurred in buildings, which fires, after all, are the very best tests that can be had. It is greatly to be regretted that architects do not always keep a complete account of the actual results in the case of fires. There is no test in a laboratory as good as the tests of fires that have actually occurred in the buildings themselves. A generation or more ago, it was common to take tests made upon small pieces of wood or iron, or any other material, and from these tests deduce coëfficients, or factors, which would be used in formulæ in order to ascertain the actual strength of large pieces of the material. But it has long since been found that this attempt is not the best, and that for safe calculations it is necessary that experiments should be made on full size pieces, such as are in actual structures. In the same way it may be said that tests with fireproof material (or, indeed, any material) which may be said to be "artificial tests," are not as reliable as those arising from unpremeditated fires in buildings. The author dwells upon the necessity of designing a building to resist fires from the exterior. Originally it was thought that a building need only be protected from fire occurring in the interior, but the author brings out distinctly the fact that it is also necessary to design it to resist fire from outside. In fact it is impracticable, if not impossible, to make any building so fireproof that it will not be destroyed by fires either outside, inside, or both, if fuel and time sufficient be given; let the fuel come from where it may, whether from furniture, fixtures, or stock. With regard to having flues to remove hot air or smoke and flame resulting from a building being on fire, as is spoken of, we think it would be very dangerous, except perhaps where the flues were in brick walls which reached from the ground to and through the roof. Flues are naturally the conductors of air, smoke and flame; ventilating flues have been found to be so. One of the rules that is (or was) in force at one of our largest hospitals, was that when an alarm of fire occurred the attendants should immediately close all the registers at the flue openings, and this rule resulted from experience. Where practicable, all flues should be completely inclosed in bricks, and vents (flues for the removal of air) should run up through the roof and outside of building, and not discharge into attics. Buildings have been burned by fires which originated in the basement and were extinguished after but little damage was done there, yet meantime fire had passed through a flue into the attic, and caused the destruction of the building. For terra-cotta arches the author prefers the "end construction" to the "side construction." In speaking of "Concrete versus Terra-Cotta Floors," he says: "The general conclusion is therefore warranted that either construction, within the limits pointed out, is good if well executed, while both are bad where defective materials or workmanship are employed." He elsewhere dwells upon the necessity of good work, etc. It would be impracticable to give a résumé of work without taking up much space, and even then not giving a full and impartial statement, besides entering on some controverted points which can not, as yet, be determined for want of sufficient experience; but the book can be said to be the first systematic account of fireproofing of buildings written by one who has not spared the necessary labor, and who is possessed of a competent knowledge of what he treats.

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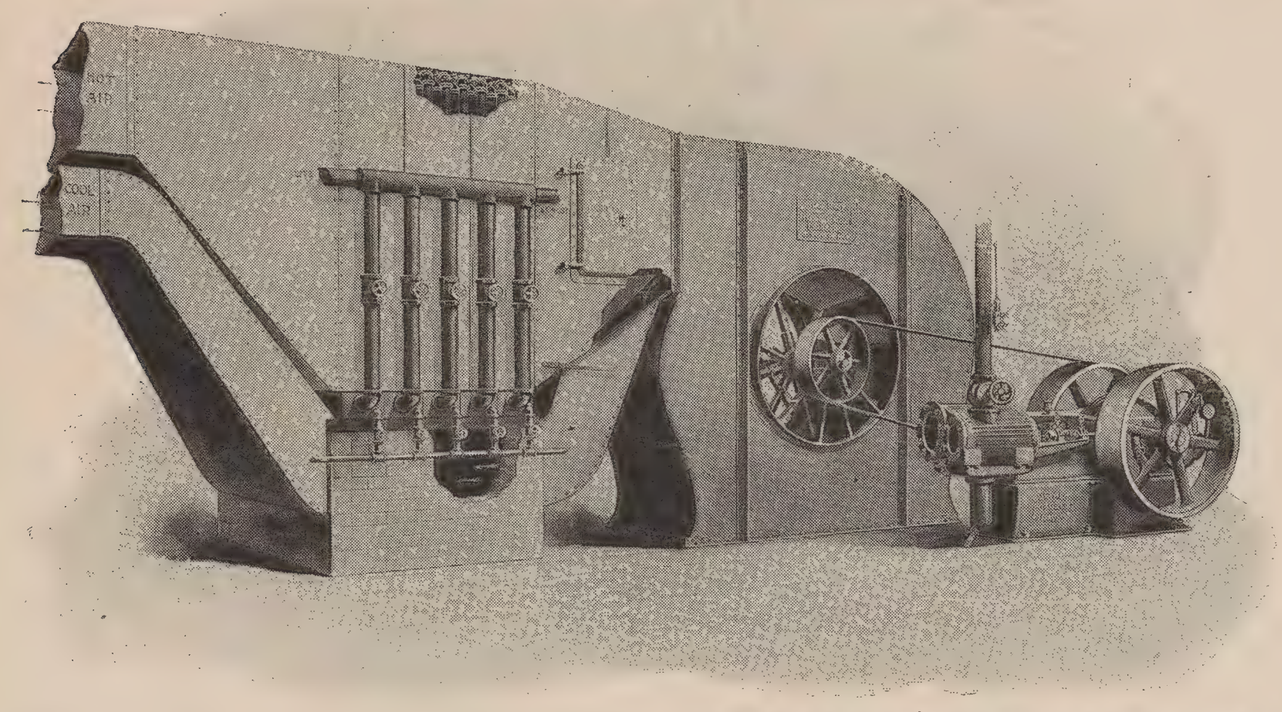

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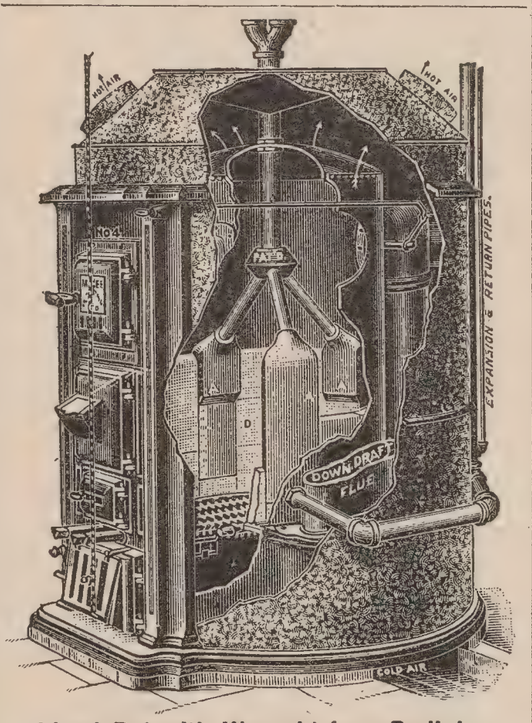

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Vol. XXXV. ADVERTISERS' TRADE SUPPLEMENT. No. 1

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Any architect can secure valuable books of reference without cost by sending for the catalogues of materials, etc., noticed from month to month in these columns. Large sums are spent on these catalogues, and they contain much practical information. Many are art productions. They may be obtained free on application to those issuing them. In writing please mention THE INLAND ARCHITECT, and oblige the journal and the dealer.

REQUESTS FOR CATALOGUES AND SAMPLES.

Those wishing catalogues and samples sent them by dealers in general may have their names inserted under this heading free of charge. The only recompense desired is that the dealers who send catalogues to these addresses give THE INLAND ARCHITECT due credit for business benefits that result.

ARTHUR J. WILLIAMS, Architect, Oklahoma City, Oklahoma.

MORRISON H. VAIL, Architect, Unity building, Chicago, has opened a branch office at Dixon, Ill., and desires catalogues and samples.

MR. JOHN STAFFORD WHITE, who has been in charge of the draughting room of the St. Louis office of Messrs. Shepley, Rutan & Coolidge, for the past three years, announces that he has opened an office in the Chemical building for the practice of architecture, the rendering of architectural drawings in water color and pen and ink, and the making of special designs for furniture, gas fixtures, etc. He will be pleased to receive samples, etc., from the trade.

ARCHITECT, Box 307, Vicksburg, Mississippi, will be glad to receive catalogues of all classes of building materials.

The general offices of the J. RIELY GORDON COMPANY, Architects, have been moved from San Antonio, Texas, to their new building, corner Main and Field streets, Dallas, Texas, where they will be pleased to receive catalogues and samples.

HOLOPHANE GLASS.

Experiments in scientific methods of lighting have ceased to be directed at the production of light so much as at its control. It would seem that the world is already over-supplied with sources of artificial light but has not given sufficient attention heretofore to the diffusion and economical direction of that light. This, however, has been made a special study of late by Messrs. Blondel and Psaroudaki, who have succeeded in demonstrating that the ordinary methods of artificial lighting are not only inadequate but wasteful, and that the employment of a diffusing and directing medium is a commercial necessity. The result of their experiments is that they have produced the Holophane Globe, a globe or shade which, when placed around the source of light, effects the desired diffusion and distribution. This invention was held in so high appreciation by the Franklin Institute of Philadelphia that the inventors were awarded the John Scott Legacy Medal and Premium by the Institute, an unusual honor.

The Holophane Globes have been made the subject of a handsome 64-page pamphlet which has been issued by the Holophane Glass Company, of No. 1 Broadway, New York. In this pamphlet the entire subject of artificial lighting has been taken up at length and scientifically and fully illustrated. The advantages of the Holophanes are set forth and demonstrated and their practical application is shown. To the casual student of the subject of lighting there is a mine of information on this important subject in this little volume, and the suggestions it contains are of great value to every one who is interested in securing the best results from artificial light at the least cost. Evidently the day of careless methods in lighting has gone by, and consumers as well as architects are awaking to the fact that the utilization of a good lighting medium is quite as important as the choice of the medium itself. The title of the pamphlet, "Light versus Illumination," is well chosen, and we commend it to the consideration of all our readers.

NO CREOSOTE.

The report that the fire at the Harvard Boat House was caused by the explosion of creosote used in the shingle stain in which the shingles were dipped was erroneous. The stain which caused the trouble was of an entirely different make.

Mr. Samuel Cabot, inventor and manufacturer of the creosote shingle stains, informs the *Journal* that there was no creosote stain on the premises and that it is well known that creosoting diminishes the inflammability of wood.

Mr. Peabody, of Peabody & Stearns, architects of the building, when asked by a *Journal* reporter, confirmed the statement that there was no creosote in use in or about the work.—*Boston Journal, December 29, 1899.*

RAILROAD NOTES.

A GOOD ROAD TO CINCINNATI.—The Monon Route and Cincinnati, Hamilton & Dayton Railway run four trains daily from Chicago to Cincinnati. The day trains leave Dearborn Station, Chicago, at 8:30 A.M. and 11:45 A.M., and are equipped with elegant parlor and dining cars. The night trains leave at 8:30 P.M. and 2:45 A.M. These trains are equipped with elegant sleepers and compartment cars, the sleepers on the latter train being ready for occupancy at 9:30 P.M. All trains stop at Twenty-second street, Forty-seventh street, and Sixty-third street, Chicago. Ask for tickets via Monon and C. H. & D. City Ticket Office, 232 South Clark street.

TRADE NOTES.

THE large steel frame palace which is being constructed for the Crown Prince of Japan contains over 72,000 square feet of floor area. Corrugated arches of No. 16 gauge steel are to be placed between the floor beams. About 125 tons of curved corrugated steel sheets, manufactured by William B. Scaife & Sons, Pittsburg, Pennsylvania, will be required in this connection.

THE Folsom Patent Roof Snow Guards, as a system for preventing the unequal accumulation of snow upon roofs, base their claims for superiority upon what seems to be good business reasons. It is claimed for them that they do exactly what they are intended for, no more, no less. The equilibrium of business principles is also maintained, i. e., they cost what they are worth—no more and no less. In short, if the claims of the manufacturers are to be credited, and there is no apparent reason for not doing so, the perfection of a snow guard has been reached. If interested in the matter write to the Folsom Snow Guard Company, 116 South street, Boston, Massachusetts.

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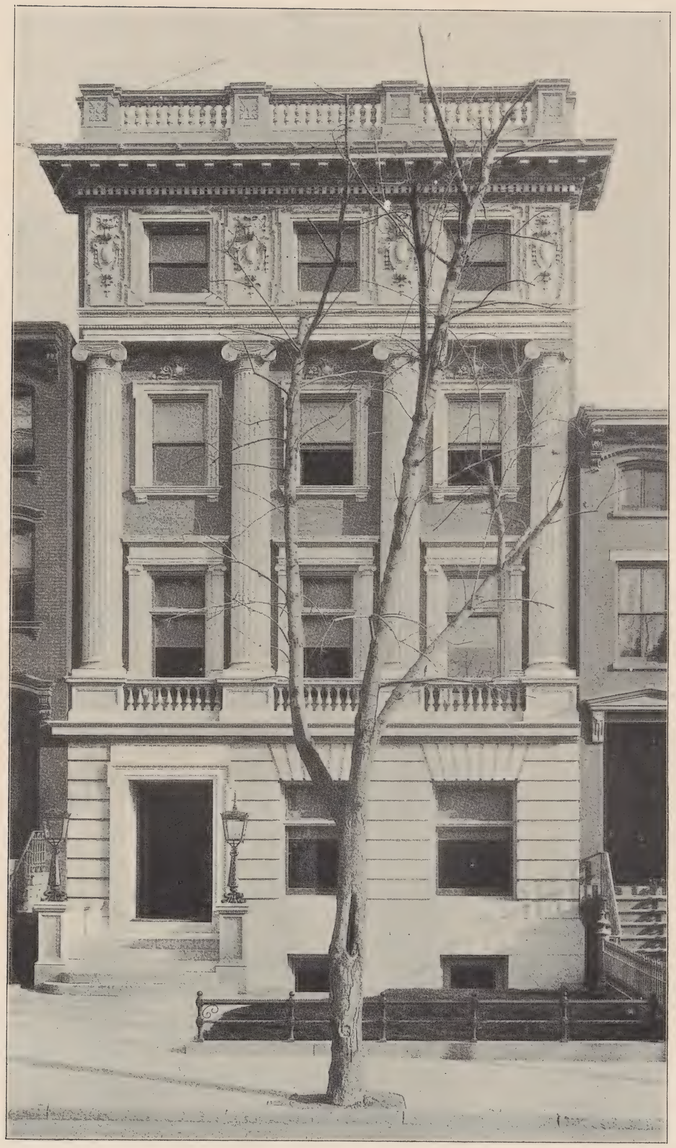
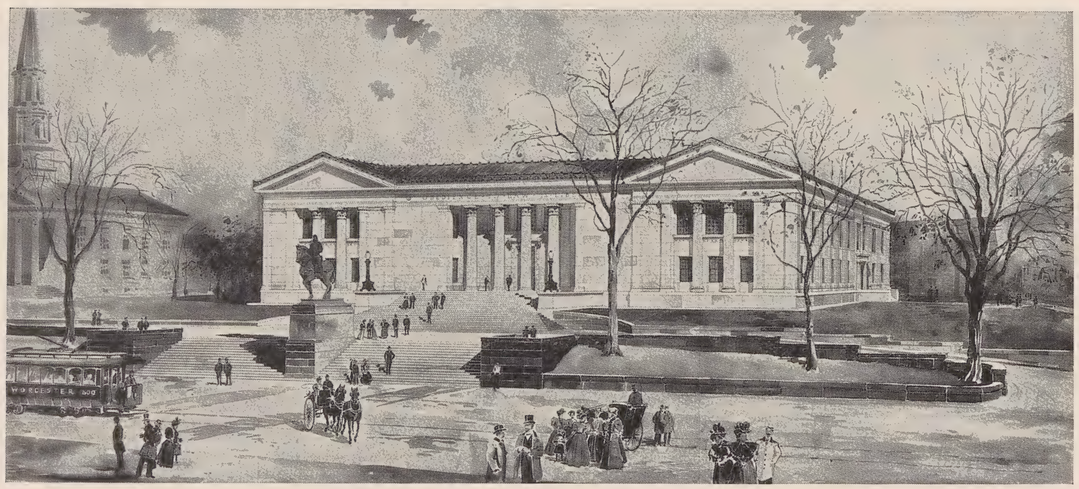


BUILDING FOR THE SOCIETY FOR PREVENTION OF CRUELTY TO CHILDREN, BROOKLYN, NEW YORK.

MONTROSE W. MORRIS, ARCHITECT, NEW YORK.

ELEVATIONS OF RESIDENCE AT OVERBROOK, PHILADELPHIA, FOR G. BRINTON ROBERTS, ESQ.
FIELD & MEDARY, ARCHITECTS, PHILADELPHIA.



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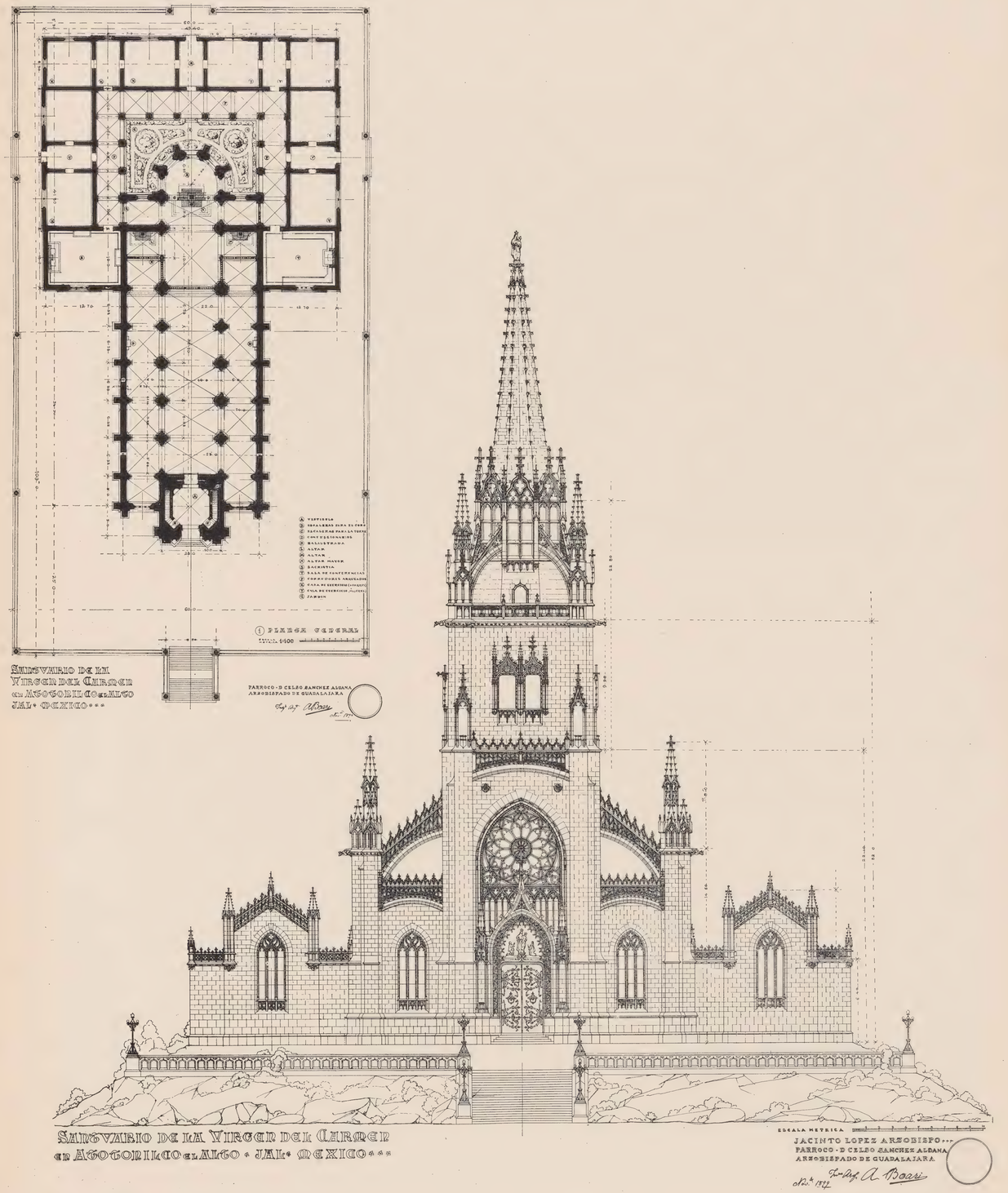
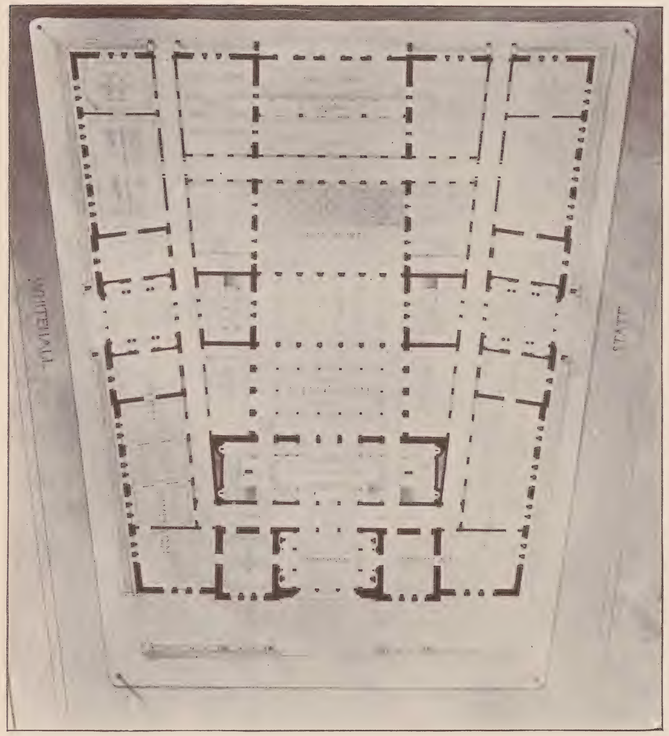
ANDREWS, JAQUES & RANTOUL, ARCHITECTS, BOSTON.

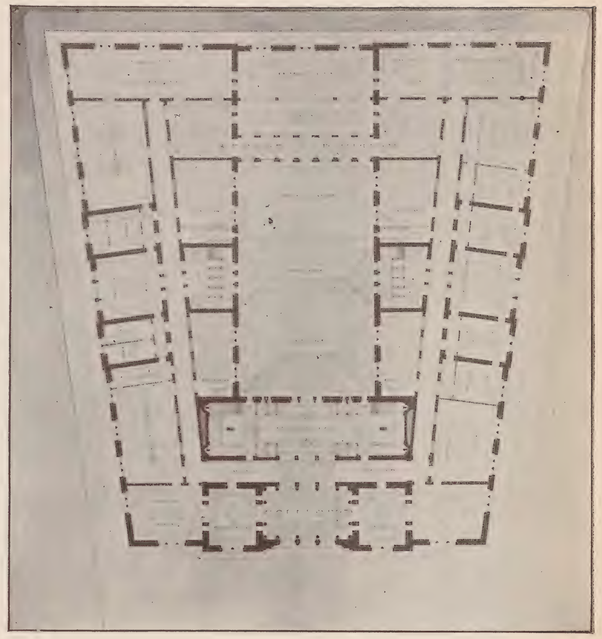
FROM T-SQUARE CLUB CATALOGUE, EXHIBITION, 1899-1900.


1 PLANTA GENERAL
1:100
SANTUARIO DE LA VIRGEN DEL CARMEN
DE ATOTONILCO EL ALTO JAL. MEXICO
PARROCO D CELSO SANCHEZ ALDANA
ARZOBISPADO DE GUADALAJARA
SANTUARIO DE LA VIRGEN DEL CARMEN
DE ATOTONILCO EL ALTO JAL. MEXICO
ESCALA METRICA
JACINTO LOPEZ ARZOBISPO
PARROCO D CELSO SANCHEZ ALDANA
ARZOBISPADO DE GUADALAJARA

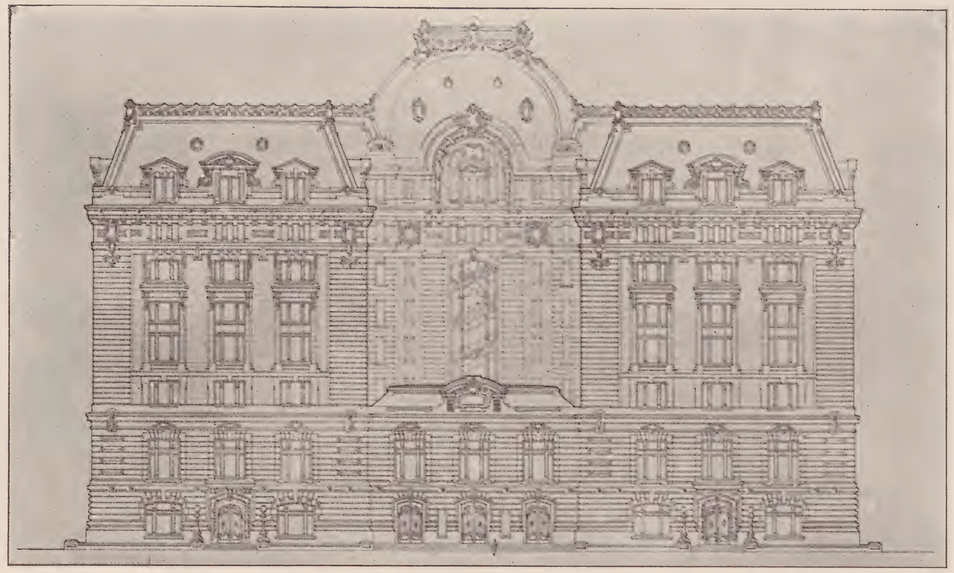
VIRGEN DEL CARMEN CHURCH, TO BE ERECTED IN ATOTONILCO, MEXICO.
A. BOARI, ARCHITECT, CHICAGO.



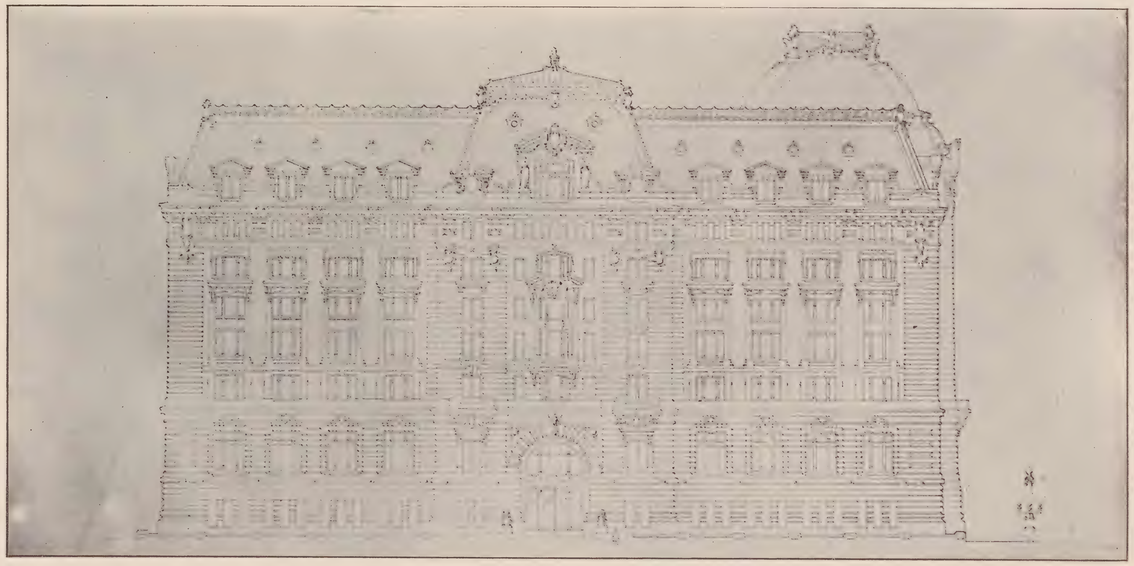
PLAN OF FIRST FLOOR.



PLAN OF SECOND FLOOR.



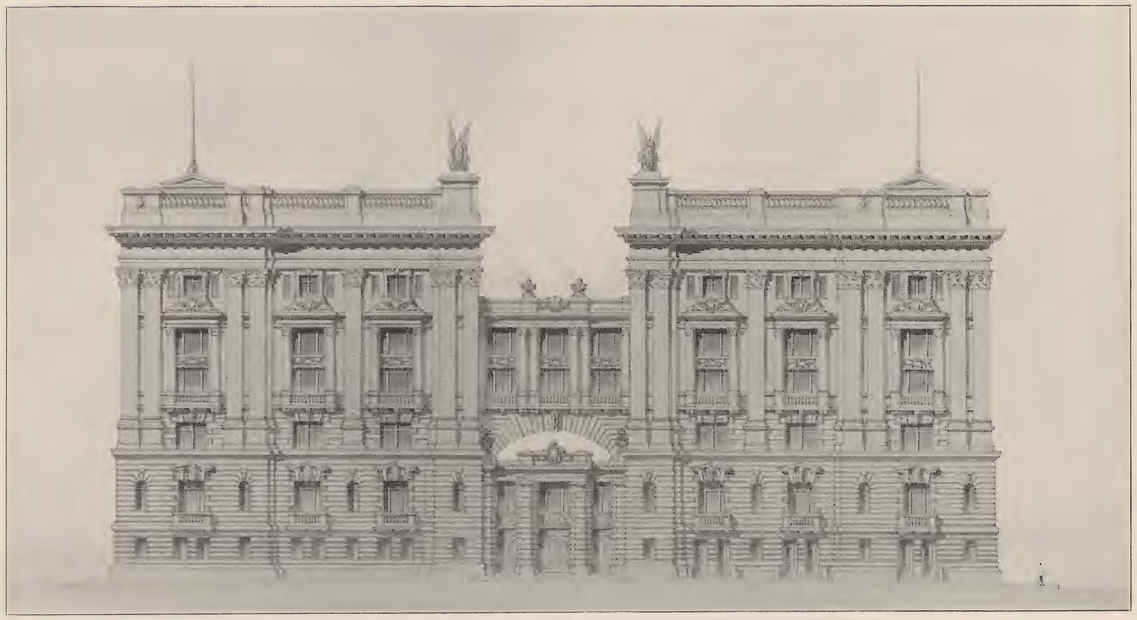
SOUTH ELEVATION.



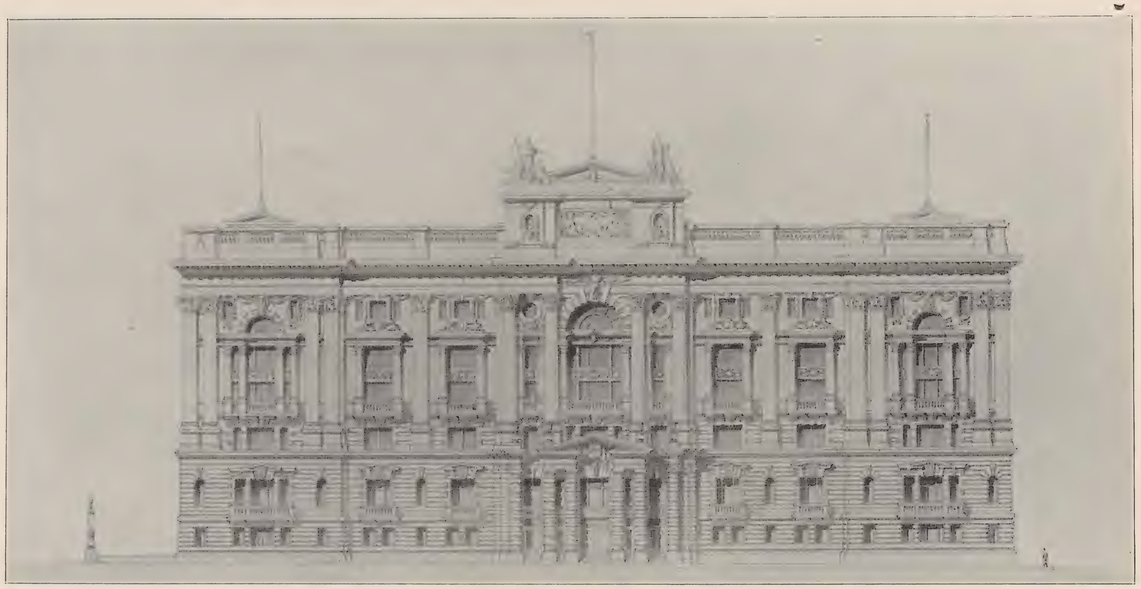
EAST AND WEST ELEVATION.

COMPETITION DESIGN, UNITED STATES CUSTOMHOUSE, NEW YORK CITY.

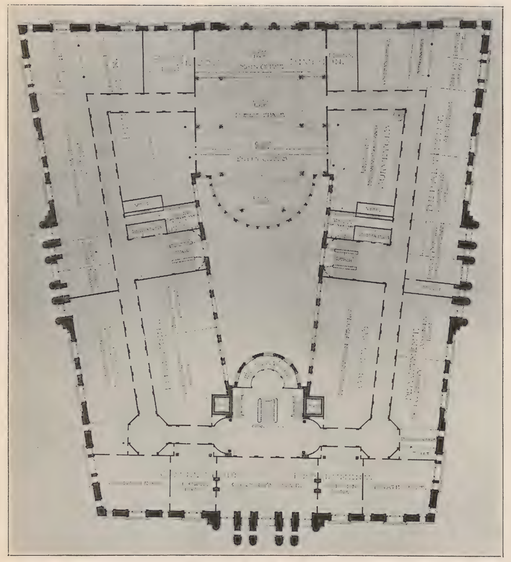
SUBMITTED BY TROWBRIDGE & LIVINGSTON, ARCHITECTS.



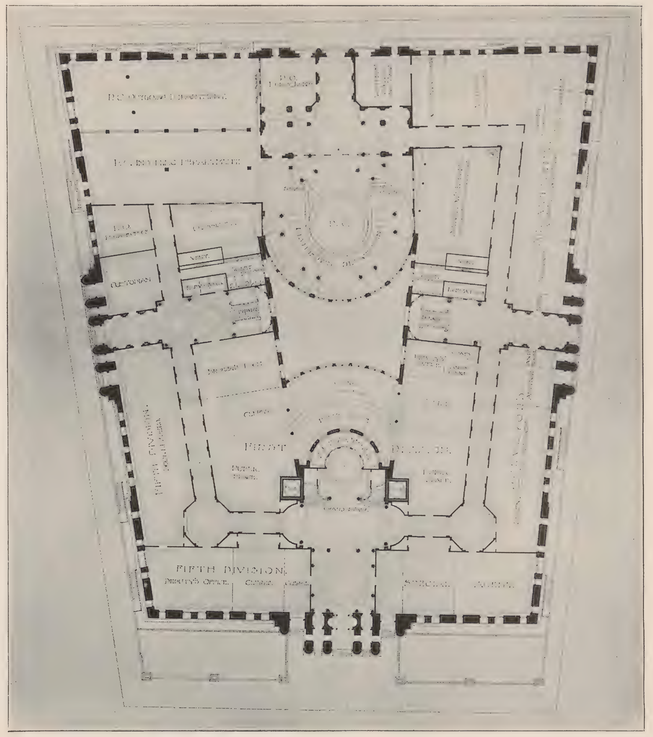
SOUTH ELEVATION.



SIDE ELEVATION.



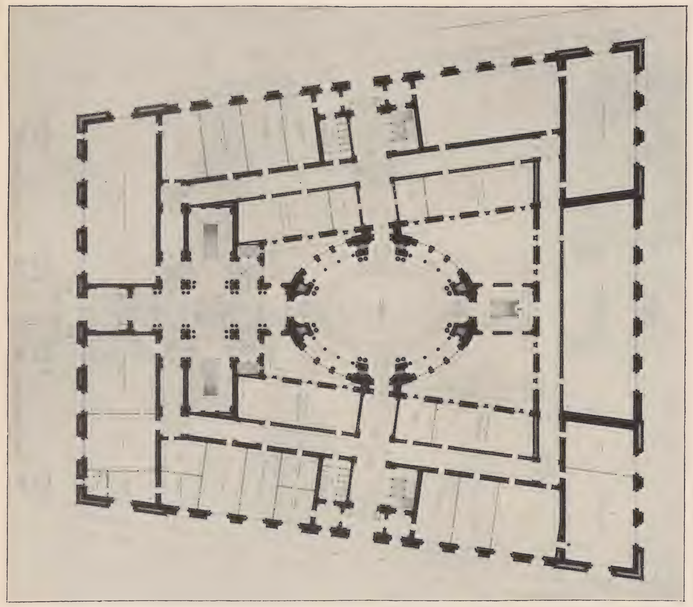
SECOND FLOOR PLAN.



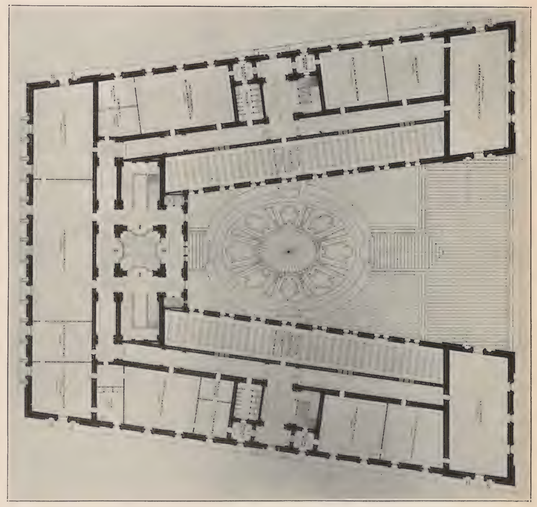
FIRST FLOOR PLAN.

COMPETITION DESIGN FOR UNITED STATES CUSTOMHOUSE, NEW YORK CITY.

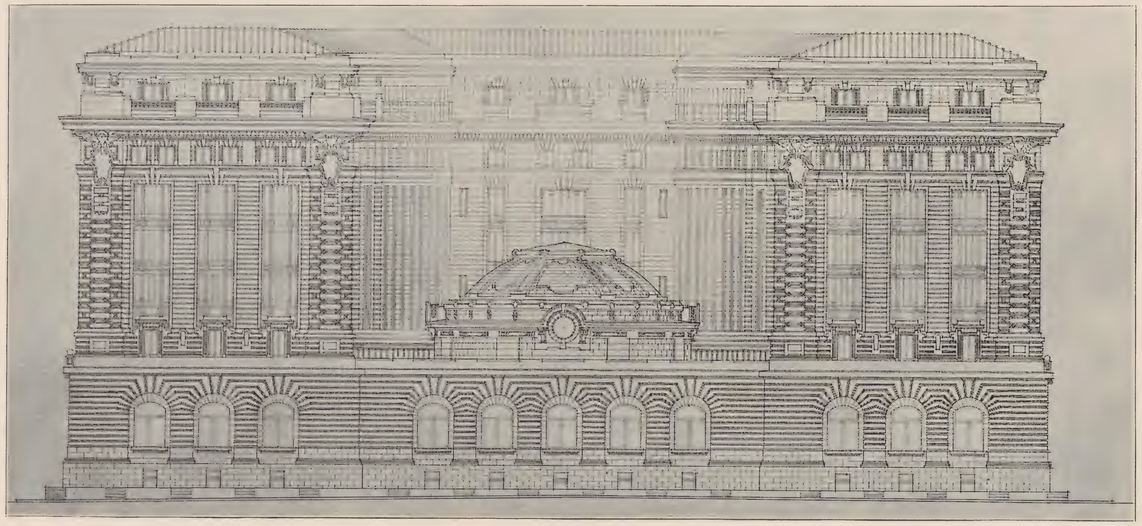
SUBMITTED BY ROBERT W. GIBSON, ARCHITECT.



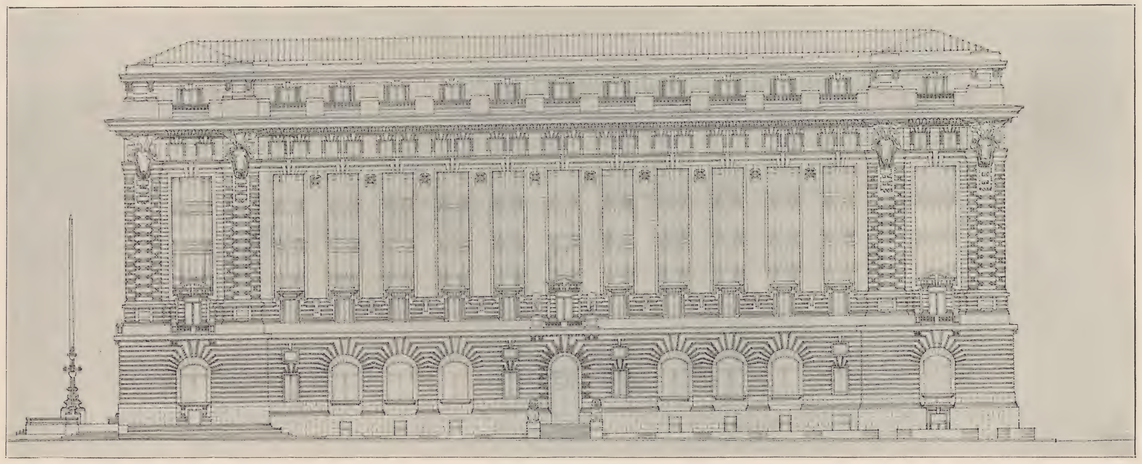
PLAN OF FIRST FLOOR.



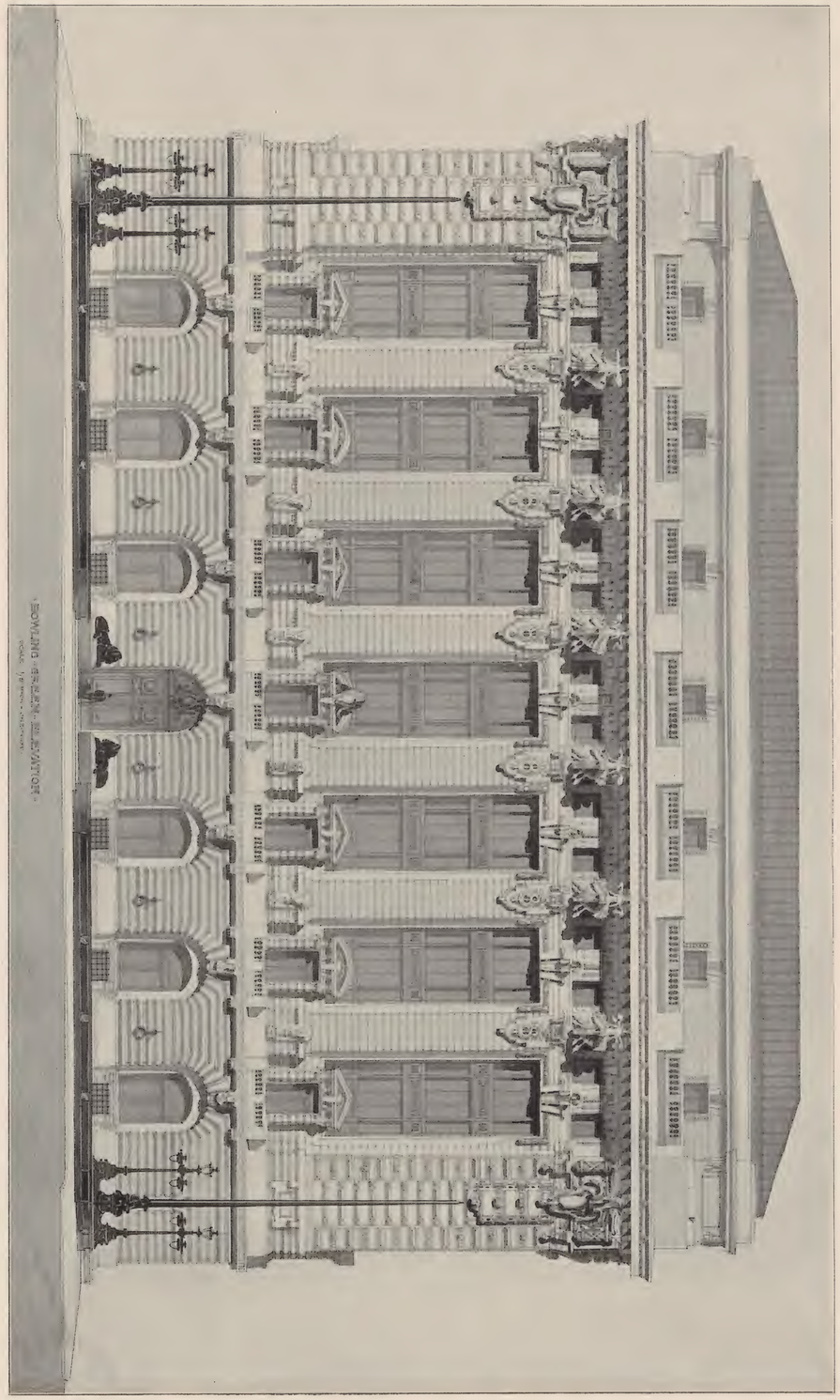
PLAN OF SECOND FLOOR.



SOUTH ELEVATION.



SIDE ELEVATION.



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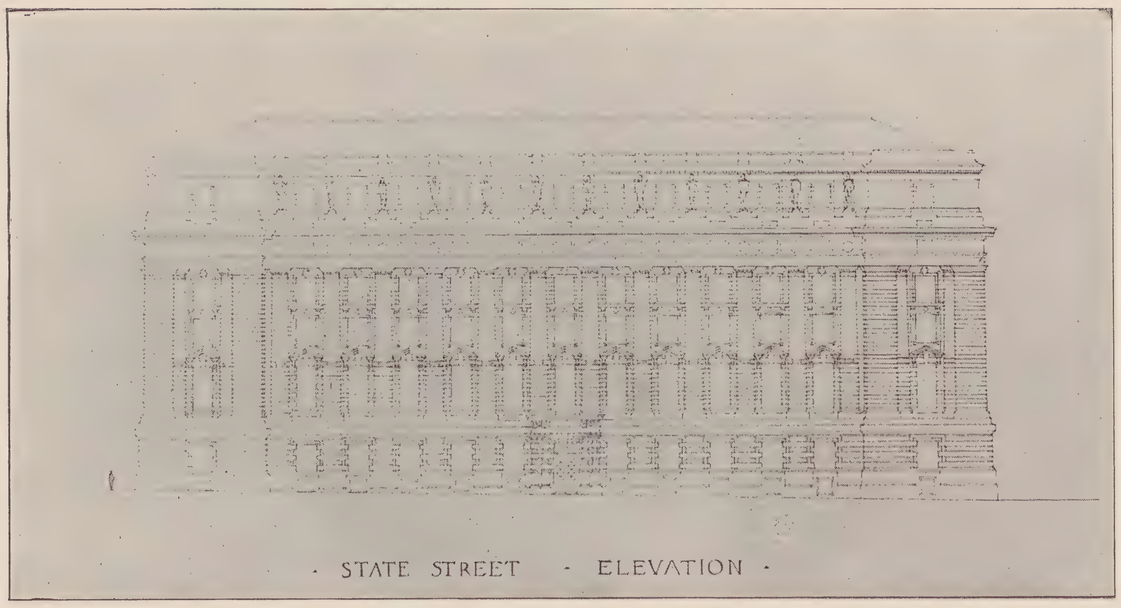

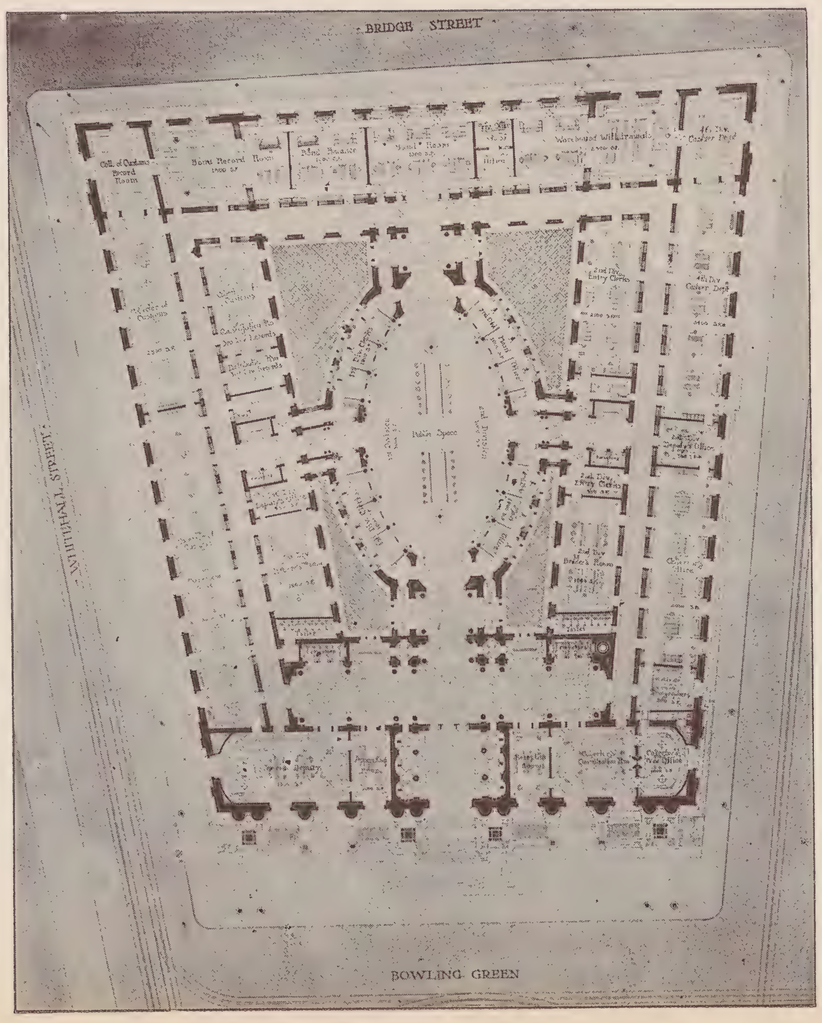

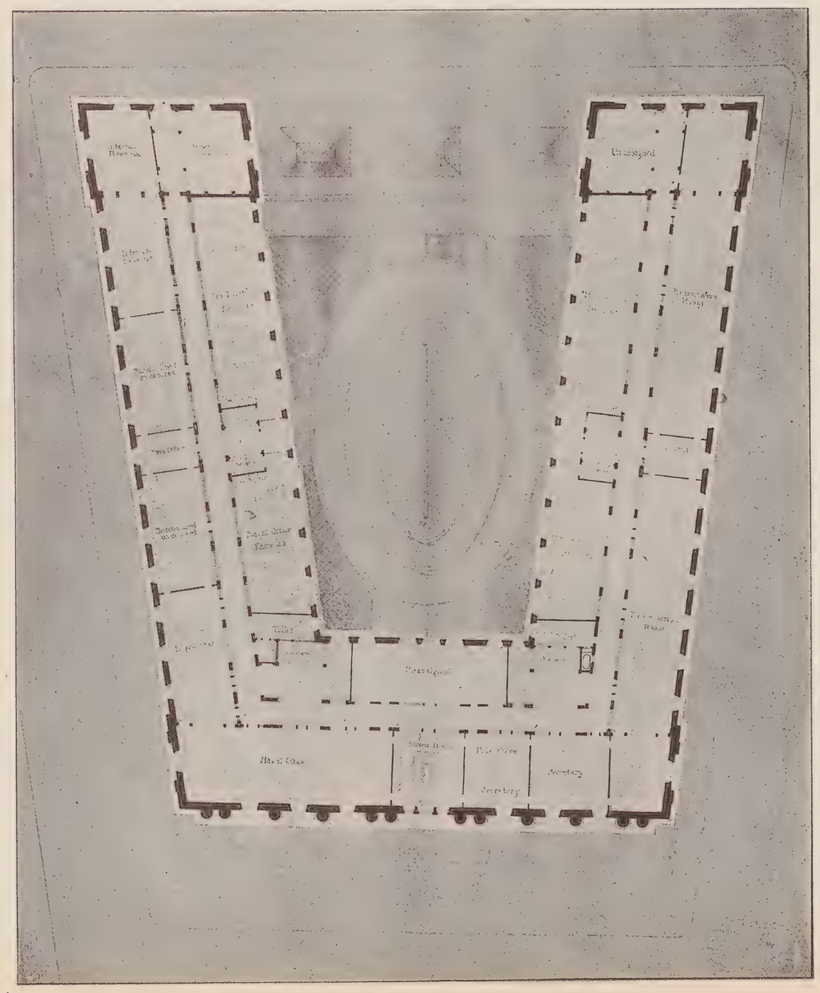

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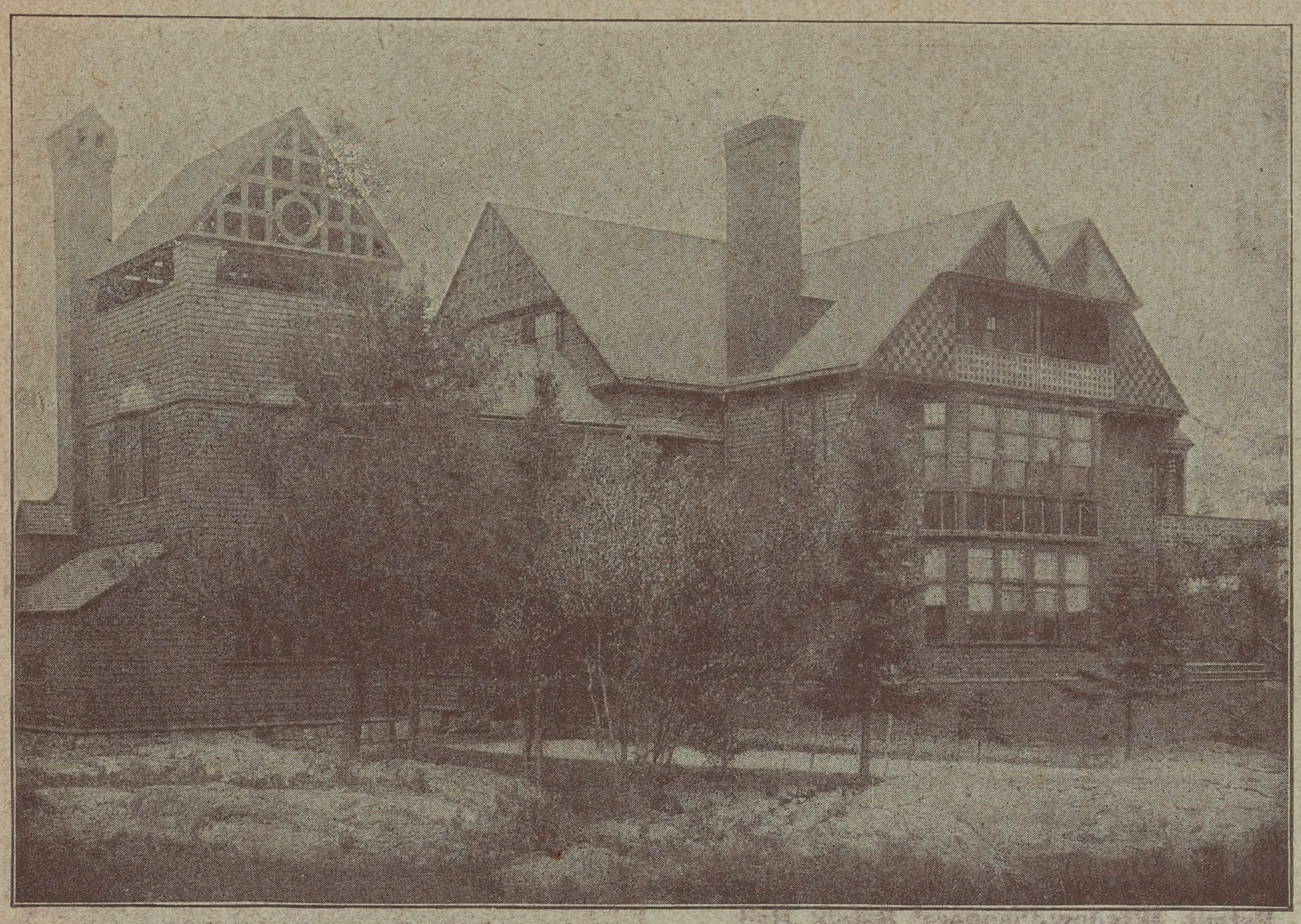

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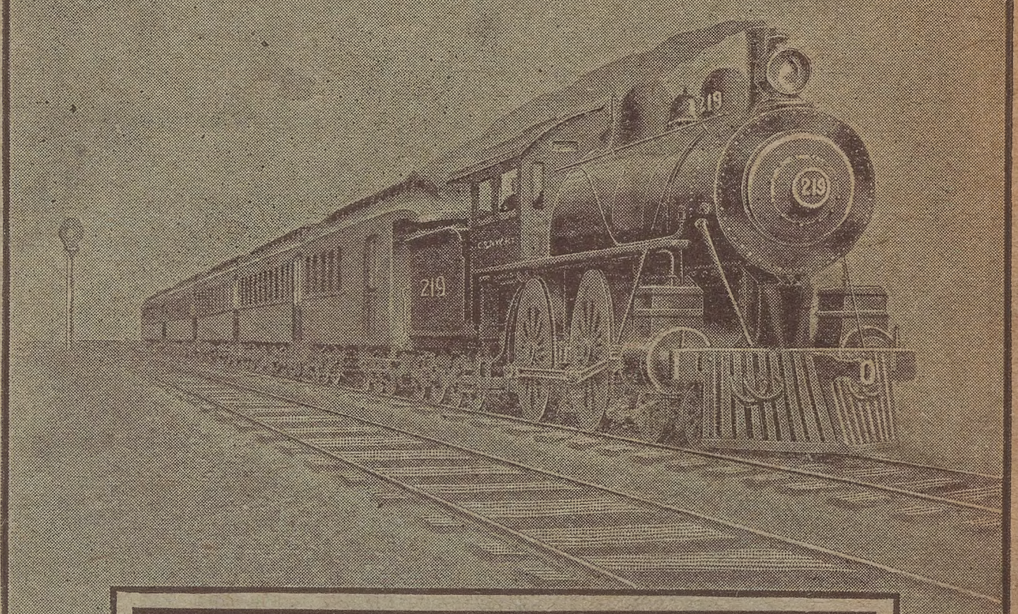

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